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M R Patil

Commerce Curriculum in Higher Education: A Need-based Approach

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Higher Education 2010: Pointers, Possibilities, Pitfalls and Principles

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Organization and Structure of Teacher Education in Orissa

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International Congress of Indian Pharmacy Graduates

Association of Indian Universities

Himachal Pradesh University

Summerhill, Shimla-5

"Recruitment Branch"

Partial Modification and Revival of Advertisement
No.2/2003, Dated 19.9.2003

The Advertisement No.2/2003 dated 19.9.2003 inviting applications for the posts of Registrar, Finance Officer and Controller of Examinations on or before 13.10.2003 held in abeyance on 30.10.2003 has now been revived only in respect of Controller of Examinations, the posts of Registrar and Finance Officer stand filled up on deputation from the State Govt. The desirous and eligible candidates may now apply on prescribed application forms for the post of **Controller of Examinations** upto 22.12.2003. The other terms and conditions of the Advertisement dated 19.9.2003 remains unchanged. Those candidates who have already applied for the post of Controller of Examinations need not to apply again.

Advt. No. 22/2003/HPU/PRO
Dated : 21st Nov., 2003

R.D. Panwar
REGISTRAR

Council of Science & Technology, U.P.

Vigyan Bhawan, Suraj Kund Park
9-Nabiullah Road, Lucknow - 226 018
Ph : 0522 - 2284819, 2211773 Fax : 0522-2211793
E-mail:anpathak_cstup@sify.com/Website:www.cstup.org

SCIENCE AWARDS : 2003-2004

Council of Science & Technology has launched a scheme called "**Science Awards Scheme**" to honor eminent scientists either born in Uttar Pradesh or who are working in Uttar Pradesh for last 10 year continuously

The following awards are proposed to be given by CST, U.P. :

1. VIGYAN GAURAV SAMMAN (One): This award will be given to one scientist for his/her outstanding contribution in the field of science writing, scientific research or special scientific achievements or development of technology useful on National level. The award consists of cash Rs. 1.00 lakh, a memento and a citation.

2. VIGYAN RATNA SAMMAN (Two): These awards will be given to two scientists for their continuous contribution to science, special scientific achievements or innovation, special science writing or outstanding technology development. Each award consists of cash Rs. 50,000/-, a memento and a citation

3. YOUNG SCIENTIST AWARDS (Five): These awards will be given to five young scientists in the age group of 18 to 35 years for their outstanding scientific contribution and technology development. Each award consists of cash Rs. 25,000/-, a memento and a citation

4. SCIENCE STUDENT AWARDS: These awards will be given to the students who have obtained highest marks in Science subjects in High School and Intermediate examinations (10+2) (2003) conducted by UP Board, Allahabad or equivalent board

5. BAL VIGYANIC SAMMAN : Five awards of Rs. 7000/- each and a citation will be given to science students up to the age of 18 years for their outstanding and important innovative scientific ideas and works including Science Models.

Eligible scientists and students are required to send their resume/curriculum vitae along with full documentary evidence for their eligibility to the award(s) (separate application for each award) by Registered Post in the prescribed proforma obtainable from **Director, Council of Science & Technology, U.P. Vigyan Bhawan, Suraj Kund Park 9-Nabiullah Road, Lucknow-226018**. This Proforma is also available from Head of various National level institutions in India , The complete application on prescribed proforma must reach to the Director, CSTUP **latest by 01.01.2004** (1st January, 2004). The decision of the CSTUP regarding conferment of above awards shall be final.

DR A.N. PATHAK
DIRECTOR

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Commerce Curriculum in Higher Education: A Need-based Approach

M R Patil

(Dnyanprassarak Mandal's College of Arts, Science and Commerce, Mapusa Bardez, Goa 403 507)

The modern higher education system in India dates back to 1857, when the universities were established in Calcutta, Bombay and Madras respectively. The idea of starting Universities in India based on the model of the London University, was first given in Sir Charles Wood's dispatch of 1854, which is called the 'Magna Carta of English Education in India'. It described the aim of Indian education as diffusion of Arts, Science, Philosophy, Literature of Europe, Indian languages, Law, Medicine, Engineering and so on. Since independence, the Indian higher education has been augmenting rapidly and has emerged as the second largest in the world. Furthermore, it has diversified into a different dimensions viz., vocational education, distance education, community education, entrepreneurial and innovative education and more importantly, on-line education. Today, there has been a phenomenal growth and expansion in higher education with regard to the universities, post-graduate departments, management institutions, colleges, student enrolment, teaching faculty strength, specializations and sub specialisations.

Commerce education, on the other hand, is comparatively of a recent origin and is one of the younger members of the fraternity of Indian higher education. Initially, its emphasis was on training the personnel in book-keeping and maintenance, accounting, typewriting, shorthand, commercial correspondence and other tools and techniques of running the business houses so as to provide the personnel to the British traders and industrialists. Subsequently, an increasing demand for diversified and higher talents for managing the business enterprises in India, gave birth to the Syndenham Commerce School in Madras during 1886, followed by the College of Commerce and Economics in 1913, in Bombay, as the first institution for higher education in Commerce. Gradually, the commerce education was spread both at the school and college level all over the country and the commerce departments were established in the universities.

During the post liberalization, commerce education is recognized as one of the most significant components of higher education and, the ongoing economic policy reforms have, in truth, accelerated the growth and spread of commerce education considerably. Curriculum on the other hand, may be regarded as a complete scheme/an aggregate course of study prescribed for a particular degree/diploma programme. The commerce curriculum for the purpose of this paper is defined as the detailed course of study (total number of subjects; elective papers, compulsory papers, optional papers and the prescribed syllabus in each paper) for each year of three years' integrated B Com. as well as two years' M Com. courses.

Today, there has been an increasing gap between what has been imparted to students through commerce curriculum and what has been really expected from industry and commerce and the commerce education both at the undergraduate and the postgraduate level needs reforms with regard to curriculum, teaching, learning and evaluation so as to meet the ever changing needs of the industry and commerce. Keeping this in view, an attempt has been made to develop a need-based approach to commerce curriculum teaching, learning and examination system. The paper is presented in three sections. The first section describes the transformation in the needs and expectations with the passage of time. The second section discusses the need-based teaching as well as learning with regard to updated curriculum, competencies, day-to-day happenings and values; and the third section deals with an application oriented examination system.

Transformation in the Needs and Expectations

The birth of industrial revolution in Great Britain during the 18th Century had gradually spread in other parts of the world and subsequently made its presence in India as well. This revolution indeed had led the process of industrialization, which in turn activated the development of other economic activities in the country. Over a period of time, the advancement in Science and Technology and spread of education had given further fillip to the country's economic development and growth. The present ongoing economic policy reforms characterized by Liberalization, Privatization and Globalization (LPG) have really brought a spectacular transformation in almost all the economic activities viz., infra-structure, investment, production, marketing, consumption, banking, forex reserves, insurance, telecommunications, information technology, international trade and others. Furthermore, all the economic activities have been exposed to domestic as well as global open competition. This deregulated and global economic environment has put the Indian business enterprises under a constant and continuous pressure in terms of meeting the challenges like customers' satisfaction, customers' delight, customers' value, customers' retention and so on.

In the light of the type of challenges that have been emerged, the expectations and aspirations of the business enterprises from the educational institutions have been considerably increased manifold. The corporate world has been looking for the educated youths (manpower), who can understand thoroughly missions of the company, visions for the company; who can bring a continuous improvement in the company's performance, enhance customers' value and satisfaction; develop solutions to problems; who can turn to be a precious asset for the company, commit himself/herself to the company's good and so on. The fast changing and accelerating expectations from the commerce and industry has posed a big challenge before the academic institutions and fulfilling this challenge has become the real need of the hour. This, on the other hand, necessitates the educational institutions to relook at the present mode of imparting curriculum and bring a need-based approach in Teaching, Learning and evaluating the curriculum.

Needs and necessities of our society are always dynamic in nature and keep on changing with the passage of time and varying perception of the society. How this revamp takes place, can be illustrated with an example of change in the media of communication from ancient to modern times. During ancient times, leaves of a tree was used as a media of written communication, which then changed to the use of cloth (lakhotas). Later, with the invention of paper, ink and the postal services, the written communication paced up. Again, with the development in Science and Technology, communication was transferred from written to verbal over electronic devices like telephones. This was not the end, telephonic communication was again updated to the wireless communication and later again simplified to electronic mail (e-mail) via Internet. This transmutation in the media of communication is not only due to the advancement in the information technology, but equally due to the changing cognition and expectations of the society. Hence, in order to satisfy ever-varying exigencies of the society, it is intrinsic to bring modifications in the policies and directions of economic institutions from time to time. Our economic policy reforms that have transformed our economy from controlled to decontrolled, investment to disinvestments, regulation to management, nationalization to privatization, domestic trade to global trade etc. would certainly justify the necessity of change, and the system of education is no exception to this. In a similar line, there has been a significant transformation over a period of time is seen in the teaching and learning system of our education. A teaching and learning under a tree gradually gave birth to an organised classroom teaching and learning of a defined course of study, and classroom teaching and learning has now paved the way for online, anytime and anywhere teaching and learning (Business Standard, 22nd July, 2003).

Against this background, it is clear that there is a genuine need to develop a need-based approach to teaching, learning and evaluation of commerce curriculum. The need-based approach for the purpose of this paper, is an approach that is aimed at a continuous upgradation in the students' abilities, skills and competencies through bestowing an updated curriculum, values, economic/non-economic day-to-day happenings, experimental skills, business-based real experiences, career guidance and so on, so as to make them competent and suitable to an ever changing needs and expectations of today's industry and commerce.

Need-based Teaching and Learning

Updated Curriculum

Curriculum is regarded as the complete designed course/programme in black and white to be taught and evaluated for a particular degree/diploma like B.Com./M.Com./PGDPM/PGDMM and so on. A course of study for any degree programme is subdivided into a number of subjects like Financial Accounting, Cost Accounting, Management Accounting, Financial Management, Business Economics, Economic Legislations and so on, and there is a prescribed syllabi to be taught in every subject. The quality of knowledge inculcated to students and its usefulness to the present day context is dependent to a greater extent upon the designed course of study. A competent curriculum would certainly bring a turn-around in the quality of knowledge imparted and in the acceptability of the concerned degree/diploma in the corporate world. Therefore, it is too imperative to revise/redesign the curriculum continuously for the course of study as a whole as well as in the particular subject of the course concerned so as to keep the course of study live and relevant to cope with the ever changing expectations of indusjtry and commerce.

In this regard, the academic bodies like University Grants Commission (UGC), Universities, academic circles, commissions, Board of Studies (BoS) and academic institutions at National/State/University/Institutional levels have been continuously making sincere efforts since the introduction of the curriculum based education in the country. The University Grants Commission's special efforts towards this end can be remembered here, with its latest curriculum (UGC model syllabi) designed for each course as well as for each subject in the course concerned in 2001 and, accordingly, the universities are actively engaged to redraw their own curriculum and syllabi of each programme of study. Notwithstanding, continuous efforts of academic bodies in this direction, the gap between what has been taught in the academic institutions and the real need of an industry continues to be at a wider pace and, bridging this gap has emerged as the big challenge. This widening gap can be gradually lessened through a simple, viable and redtapism-free approach to a continuous updating syllabi as against the present lengthy procedural and time-consuming approach. In the present academic administrative setup, to bring any change for the good in the curriculum, has to be routed through different bodies set up by the university like Board of Studies in the concerned subject/faculty, Academic Council, Executive Council and others. Finally, the changes brought in the curriculum have to be approved which in turn to be communicated to the University post-graduate departments and the colleges concerned as the case may be. This process itself will take a sizable amount of time and needs a continuous follow-up.

Under these circumstances, the best possible alternative approach to an updated curriculum teaching is to teach relevant areas and issues of present significance without disturbing the structured syllabi in the concerned subject though certain important aspects are not figured in the course of study. A teacher teaching the concerned subject at his/her level, though not highlighted in the syllabi, can very well employ this device of teaching current issues. For instance, while teaching an Export-Import policy 1992-97, it is equally important to teach students the features and directions of Export-Import policy of 1997-2002 and 2002-2007 respectively, so as to update students' knowledge in this area and enable them to understand the country's future roadmap towards the Export-Import trade, though the latter policies are not included in the syllabi. Similarly, while teaching E-Commerce and Internet, it is more essential to teach the Information Technology Act 2000, the first Indian cyber law, so as to enable students to understand the legal framework for E-Commerce, E-Transactions and similar activities associated with commerce and trade. While teaching consumers protection Act 1986, as one of the economic legislation, it is essential to teach a recent amendment to this act came into effect from March 15, 2002, empowering a redressal consumer Forums/Commissions on equal status as of Civil Courts and, the government proposed six panels on Consumers protection viz, working groups on food safety; drugs and Pharmaceuticals; health and safety; misleading advertisements and counterfeit, fake, spurious and contraband products. While teaching Non-Performing Assets (NPA) in the banking subject, it is important to teach a recent NPA norm reduced to 90 days from 180 days for treating a portion of an asset (advance) as Non-Performing Asset. This norm is made effective from the present fiscal year. This recent norm relating to NPA might not be in the syllabus but its awareness to students is very essential to have an updated knowledge in the subject concerned. Teaching of current aspects and issues in the subject concerned, though those are not incorporated in the syllabi, is indeed appreciated.

Hence, a teacher, in the best interest of the student community, instead of waiting for the Board of Studies to bring a change in the syllabi, better to employ this device at his/her level. Teaching relevant current issues, though their presence is not in the syllabus may not certainly go against the interest of the students. Further, in order to make this approach successful, it is desirable to change the students perception confined to syllabus oriented learning and motivate them towards a continuous learning of an updated curriculum. In addition, they have to be told about the relevance and necessity of learning over and above the prescribed syllabus.

Teaching and Learning of Competencies

Today, a student, besides learning concepts, principles, tools and skills in the functional areas like production, marketing, finance, human resources and so on, has to develop certain competencies like influencing others to respond positively to the change in the working schedule and accountability pattern; impressing others to work unitedly towards accomplishing targeted goals; proficiency to resolve amicably the mounting disagreements/differences between the supervisory staff and the working team; ability to set himself/herself as a model to be followed by others whole heartedly and capacity to instil in the workers a sense of dedication and commitment. These competencies based on emotional intelligence play a momentous role in ensuring a success and, the corporate world has recognized competencies more superior to acquired skills. These competencies are not to be taught in toto in the classroom and they have to be developed through experience. Nevertheless, it is sine-qua-non to evolve certain tools to teach and inculcate some abilities in the students through the teaching-learning process. How competencies can be developed in students in the classroom teaching and learning is illustrated with some examples.

Example I: A student acquired very good communication skills from a classroom teaching. Mere becoming thorough in communication skills may not make him/her an effective communicator unless he/she develops competency. A competency in communication refers to a clear, simple, convincing and an appealing message (For instance, "May I please have your attention?"). A seminar presentation, a question and answer session, extempore speech, group discussion, and an exercise of a similar nature by the students may be used to develop a competency in students in communication.

Example II: A student learns to some extent drafting skills from the classroom teaching-learning system through notes preparation, answering examinations, writing assignments, writing class tests etc. But those exercises may not bring perfection in drafting unless it is done neatly, grammatically, legibly and sequentially. (To illustrate: "A purchase committee meeting is fixed. All the members should attend without fail", is an imperfect drafting. While, "A purchase committee meeting is convened on 18th October, 2003 at 11.30 a.m. in the Conference Hall B-2. The following members are requested to attend the same" shows competency in drafting. This skill in drafting can be instilled in students with the help of some exercise that can be designed based on organisations' activities and real life managerial situations. Towards this end, exercises like writing letters, performance reports, special reports, orders, notices, requisitions, brochures, invitations, minutes of meeting and so on may be used. While carrying these exercises, students may be asked to assume different executive/managers/supervisory role so as to make an exercise more meaningful.

Example III: The students acquire the conceptual skill of marketing research, its planning, approaches to marketing research and tools used for gathering primary information from the consumers. One of the tools used for eliciting opinions of the consumers is questionnaire. An efficient collection of information through a questionnaire is dependent upon the ability to design an appropriate questionnaire, its administration, deciding on the type of questionnaire (close ended/open ended), whether a question with two or more possible answers, Likert Scale and Rating Scale answers, to hold the consumers, their attention and an active involvement in an interaction. These capabilities can be developed in students through a questionnaire drafting assignment based on the company's real marketing problems.

Example IV: In the present teaching and learning system, the students learn more about concepts, functions, principles, qualities and so on and hardly they get an opportunity to make use of their textual knowledge to the real life situations. In this direction, one of the best methods i.e. case study can be used whereby the students can develop certain abilities. A case study method is regarded as an important teaching as well as learning device. Under this method, based on the real managerial problem/situation of the business enterprise, a simulated case (exercise) covering a brief company's background and description of the managerial problem is prepared and the same is put across the students in the classroom and the students are expected to assume a managerial role and diagnose the problem, analyse, evaluate and come out with workable plan of actions and solutions to the concerned problem. For instance, a company has an objective of increasing profitability by improving the overall quality of its products/services. How this is to be achieved? A case emphasizing on this problem may be prepared and administered to the students in the classroom. This exercise really gives an opportunity to the students to use their hidden talents in bringing a practical solution on the one hand and enhances the thinking and other analytical ability of the students on the

Teaching and Learning of Day-to-Day Happenings

Teaching and learning of important day-to-day happenings and events in and around us assumes a greater importance in today's ever increasing competition. The branch of knowledge has been of course growing by leaps and bounds and its management has become a real difficult task. In the present environment, in order to survive and progress, one has to update one's knowledge continuously. One of the ways in this regard is to encourage our teaching programme focusing on day-to-day happenings like change in the trend of inflation; forex reserves; industrial growth, currency exchange rates; RBI credit policy; plan to bring an umbrella act to avoid conflicts among Companies Act, Banking Regulation Act, SBI Act, SBI Subsidiaries Act and the bank nationalization Act; an amendment effected to TDBI Act, with regard to converting it into Bank; WTO's Fifth Ministerial Conference scheduled 2003 in Cancun, Maxico (Doha to Cancun); business process outsourcing and employment opportunities in India; the first Indian Bank (SBI) to open an offshore Banking Unit at SEEPS; present Government Equity Stake in Maruti Udyog Ltd; highlights of Economic Survey Report; Union Budget and so on. Teaching and learning of such day-to-day happenings would certainly bring a change in the students' personality as well as in their learning direction.

Teaching, Learning and Practising of Values

'Value Concept' is indeed considered to be one of the most essential traits of every human being. This certainly ensures an individual a better quality life to himself/herself as well as an organisation to which he/she is associated with and, finally this will bring a good change in the society. Today, there has been an increasing recognition for values like honesty, punctuality, sincerity, integrity, respect, fairness, patience, considerative, discipline, dedication and commitment etc. More importantly, the corporate world looks for personnel not only with intellectual abilities, skills and competencies but also with certain core values. In recognition of the necessity of value-based management practices in corporate world, in the interest of the shareholders, the Securities and Exchange Board of India (SEBI), has introduced a code on corporate governance and made an essential pre-requisite for a company under the listing agreement with stock exchanges. This clearly underlines the necessity of imparting value-based education in today's ever increasing liberalized environment. On the other hand, the value content in the present curriculum is scarcely seen and as a result,no much emphasis is given for teaching and learning of values in the present system. Therefore, though the values are not explicitly expressed in the syllabi, it is necessary to teach students certain values along with the prescribed course of study. In this direction, a concerted effort needs to be made towards describing the conceptual notion of values, their relevance and benefits to the students in their life as well as in their career in particular and to the society at large in general on the one hand and persuade them to practise the values in their day-to-day dealings, transactions and functions, on the other.

Application-oriented Examination System

Examination is another important component of our education system and it is regarded as a process whereby acquired knowledge and skills of students in a particular course of study is tested orally/written with some tools like personal interview, seminar presentation, group discussion, assignments, experimental test, answering questions and so on. The present system of examination is more of information oriented rather than an application-oriented and is aimed by and large, at testing of students' reproducing ability of memorized information from text books, study materials and other periodicals. It hardly aims at exploring students' inner hidden intellectual ability, creativity and innovative skills and hence there would be no enhancement in their thinking and analytical abilities. It can be illustrated with a question. For example, What is planning? Explain different elements of planning. This question straightaway seeks information/literature with regard to the conceptual meaning of planning and its different elements and a student without being involved in a question can reproduce very systematically a good amount of memorized information. Obviously, this test does not give a student any opportunity to think and bring his/her own creative answer. As against this, the same question may be asked in a different way. How does planning promote an overall efficiency of a company? Discuss with an example. This question certainly will stop a student for a while from answering and make him/her to involve in the question and think over it before answering. Therefore, it is necessary to bring a change in the system of examination particularly with regard to the designing of questions that seek a creative, self-thought and original answer as well as assessment of the students' performance in the light of the questions asked, so as to make more practical and application-oriented. This one initiative in this direction obviously results in the following benefits: it develops in students thinking ability, analytical mind, creativity and application of skills which are indeed, the expectations from the industry and commerce; it reduces the intensity of unfair means practices like possession of copying material, actual copying, leaking of question paper etc. as questions seek answer not in the form of readily available literature but, from the students' own understanding and creative thinking; it helps to save the cost of supervising and monitoring agencies like custodian, visiting squad, surprise squad and so on.

Conclusion

Industry and commerce are the two important fast growing sectors of our economy. The economic development and growth of the nation is dependent to a greater extent upon the growth and expansion of those sectors. In this regard, Human Resource (HR) as one of the key factors among others, assumes a vital role and an efficient performance of these economic activities depends upon a competency of human resource. A need-based approach to teaching-learning and examination of commerce curriculum is one of the initiatives towards developing competency. The objective of this need-based approach can be achieved with the positive response from the student community, planned and continuous efforts of the teaching faculty and an active support and cooperation of the college/department. This approach would definitely develop abilities and bring a good change in the students' overall personality. ☐

CALENDAR OF EVENTS

Proposed Date of the Event	Title	Themes	Names of the Organising Departments	Name of the Organising Secretary/ Officer to be contacted
Jan. 10-12, 2004	International Conference on Fourth Wave Education	To evaluate strategies of education in the fourth wave society, where the focus is on knowledge, spiritualism and responsibility.	All India Association for Educational Research, and Department of Education, Saurashtra University, Rajkot 360 005(Gujarat)	Dr D A Uchat, Conference Director, Professor and Head, Department of Education, Saurashtra University, Rajkot 360 005, India Phone: (O) +91-281-2588124, (R) +91-281-2452145. E-mail:dauchat2003@yahoo.com
Jan 20-24, 2004	Workshop on Management of University Administration	To acquaint the participants with the system of management, office administration and supervision in the institutions of Higher Education, and the need and scope of staff development in such institutions.	The Association of Indian Universities, New Delhi -110002 and Department of Educational Studies, Jamia Millia Islamia, New Delhi-110025	Dr. M. Goswamy Director (Research) Association of Indian Universities, 16 Kotla Marg New Delhi - 110002 Ph.:(011)23230059 23231097 Fax : (011) 23232131 E-mail: aiu@del2.vsnl.net.in Or Ms. Surinder Chawla, Workshop Coordinator, Association of Indian Universities, 16 Kotla Marg New Delhi - 110002 Ph. : (011) 23230059/23231097 Fax : (011) 23232131 E-mail: aiu@del2.vsnl.net.in

Higher Education 2010: Pointers, Possibilities, Pitfalls and Principles

M S V Prasad
(College of Management Studies, GITAM, Visakhapatanam - 530045)

M Ratna Kala and **M Sandhya Sri**
AVN College, Visakhapatnam - 530 001)

The major changes that are witnessed in Indian higher education in recent times include: the assessment of teaching provision, the creation of unified funding councils; massive growth in student enrolments, shifts in the sources of institutional funding and a wide commitment to faculty and staff development.

It may be tempted to conclude that a transition period had occurred in Indian higher education - upto 2010 phase of consolidation and development, of stability and calm. The current phase of consolidation on growth in student numbers might herald such a period, but it could pass as economic conditions improve. Perhaps of greater consequence could be the review of higher education which the Secretary of State for Education has initiated. There are signs of a willingness to enter into dialogue about the future of Indian higher education. Yet there are also many indications of continuing uncertainty, of unresolved tensions and, indeed, of pressures for further change.

It is found that many academicians in Britain, Australia and Canada spoke of the need to be able to handle unexpected environmental shocks. Economic, social and political perturbations of varying amplitude are almost inevitable over a period of ten years - a period that exceeds commonly-held views about the length of an economic cycle.

Pointers

We have identified five main strategic concerns namely:

(i) Diversity and differentiation;
(ii) graduate employment;
(iii) qualifications and the organization of teaching and learning;
(iv) increasing income from the private sector and
(v) staff recruitment.

Their conclusions will be summarized briefly under each sub-heading.

Diversity and Differentiation

Mass higher education must cater to a wide spectrum of interests. Will this be achieved by concentration or dispersion? By institutional differentiation or convergence?

Graduate Employment

The annual output of graduates will be the highest in India; can the labour market absorb the output? Will graduates adjust their aspirations? Shortage of graduates in some areas will coexist with weak demand in other areas; what are the longer term implications of several career shifts during the working life of many graduates?

Qualifications and the Organization of Teaching and Learning

Broadening of entry qualifications will continue. Advanced Level/Higher Grade School Leaving qualifications will be the dominant form for young entrants; modularization will become almost universal; discrete course credits of limited length will encourage a criterion-referenced approach to assessment.

Are there implications for the classified honours degree? Can the system sustain the position that all degrees are equivalent? If not, what will replace it? Franchising of courses to further education colleges will expand but not on the basis of differential costs. Falling course completion rates could become a concern. There will be rapid growth of extended (postgraduate) education including continuing professional development. Quality assurance of extended education will become a focus of attention.

Income from the Private Sector

Some form of cost recovery from fulltime undergraduates is inevitable. The focus of attention will be on effective, efficient and equitable mechanisms of cost-recovery; top up fees could produce additional funding for the sector. Doubts will arise about additional income from quasi-commercial activities. Continuing education will move to overhead recovery costing when it becomes mainstream.

Staff Recruitment

If the economy recovers, there could be recruitment shortages in many subjects. Staff development and professionalism in higher education teaching will need to be taken more seriously. There will need to be some flexibility in salary scales and more mobility between academia and the professions, including more joint appointments.

Possibilities

In this section the focus is on the possible size, shape, structure and nature of the Indian higher education system by 2010, for which the following six critical issues are identified.

(i) Distinctiveness in a competitive environment;
(ii) client orientation;
(iii) quality in teaching, research and community service;
(iv) institutional values, culture and organization;
(v) staffing and
(vi) resources, systems and infrastructure.

For each a blueprint for change then identifies specific actions to be implemented. The outcomes for higher education will not depend solely on good positioning or even on good academic leadership and financial management, vital as these ingredients are. Other factors will play a crucial role. We should not underestimate the potential importance, on various scales, of coincidence, timing or luck.

The principal determining factors are likely to be:

- The volume and nature of demand and the ways in which the system and institutions respond to diverse demands;
- the volume and sources of funding for institutions and students;
- the contribution of new technologies to teaching and learning;
- the impact of external competitors;
- the cumulative effects of research assessment exercises and
- the implications and outcomes of debates over the standards and purposes of higher education.

Tapper and Salter (1992) regretted that all the upheavals did not result in a serious attempt to formulate a new model of the university. They urged that universities to "create their own vision of the future".

Demand

Williams and Fry postulate three feasible scenarios:

(1) Stagnation or even reversal;
(2) steady growth and
(3) continued rapid growth (after the announced consolidation lull).

The cost of higher education and the availability of satisfying and motivating employment opportunities will affect demand but, on balance, it is likely that growth will take place over the ten-year period. It would, however, be surprising if there were not shifts in the distribution of demand, between subjects/ programmes, institutions, levels and modes of study. It is also probable that, from time to time, government will be unable to resist the temptation to steer demand towards perceived employment or societal needs, although the effectiveness of past attempts at steering is open to question.

Institutional response to market uncertainties and perceived opportunities will doubtless vary but most will seek to examine carefully the match between institutional strengths and capabilities and market demands and opportunities. That is in simple terms the autonomous, competitive response. A variant introduces selective collaboration through strategic alliances as a means of maintaining and preferably broadening, provision and choice for students without corresponding investment costs for each institution. Such alliances bring in their wake the inevitability of mutual recognition of credits, common academic years, compatible assessment procedures and similar quality assurance systems. As is happening already, these strategic alliances can extend outwards from the higher education system to embrace further education colleges, outreach centres, workplace locations, and dispersed open learning networks. In the future they could more actively include schools.

Robertson, in Choosing to Change, advocates an extremely open system based on credits and credit transfer; but that report acknowledges that some ancient and older universities may resist such widespread change, fearing the implications both for their standing as research institutions and for the coherence and reputation of their undergraduate degrees.

Funding

Future funding is the subject of much analysis, speculation and debate. Robertson ventures the opinion that it could be timely to revive the topic of educational vouchers, which he perceives as a student-centered approach to funding that could be supportive to the promotion of credit transfer schemes. That alone may ensure that the notion encounters opposition from particular interests, but more reasonable concerns are likely to focus on the practicalities in operating and managing such a system.

On student funding the main issues are the adequacy of levels of support and the adoption of efficient and equitable mechanisms of cost recovery, if the latter is operated. Unless badly mishandled, changes to cost recovery mechanisms should not affect aggregate demand, but there are recurrent concerns about possible implications for the structure of the demand. Changes to the level of cost recovery are a different matter.

For institutions, three issues dominate the funding debate, namely the level of government support, the distribution of that support and the means of rewarding successful performance. Consideration is being given to attaching greater importance to outcome funding. Unless care was taken, that could reward subject profile as much as institutional performance.

New Technologies

Confident forecasts continue to be made about a major breakthrough in the contribution of modern technologies to teaching and learning. By 2010 could we have virtual classrooms? A virtual university? Our estimation is that the use of new technologies in teaching and learning will spread more widely, rapidly and deeply in some areas than in others. For example, leading business schools are using computer technology to support their international and in-house company distance learning programmes. Modern technologies are a natural medium to support and enhance many facets of continuing professional development, notably updating and skills development.

Many of the mainstream full-time undergraduate and taught postgraduate degrees are the areas on which diffusion has still to impact. Adoption has implications for curriculum design, methods of assessment, learning objectives, the role and preparation of lecturers/tutors and the provision of personal and technical support.

The availability of high-quality, learning rich, flexible materials at comparatively low costs would influence the pace of diffusion. Some argue that standardization would foster diffusion. Linked to discussions about the use of new technologies are arguments not only about cost and effectiveness but also about traditions. Teaching in higher education is often described as a cottage industry and it is questioned whether that traditional methodology is appropriate in a shift to mass higher education. The additional challenge is a greater interest in student-centered learning.

External Competition

What role will external competition play by 2010? In our view there are three major possibilities:

(i) Further academic drift within further education towards higher education;

(ii) widespread adoption by employers and professions of higher level and

(iii) external providers of higher education programmes, or parts thereof, or of materials.

The higher education system should be capable of withstanding any of these challenges and turning them into opportunities. Employers would be resistant to significant academic drift in further education if it was at the expense of vocational training. The higher education system has been cautious about these qualifications but if national targets are met, even a few years delayed, then a substantial percentage of the Indian workforce will be qualified at the equivalent of one of these levels by 2010.

Could various forms of external provision increase rapidly by 2010?. However, they could only constitute a serious, threat if they acquired accrediting/awarding powers and their "products" were valued in the marketplace. Awarding powers require legislation, and reputation tends to develop over time although it can be reinforced by shrewd marketing. Thus in the medium term external providers should prove additive, supportive or complementary rather than constituting a threat to the system. Indeed all of these possibilities could offer higher education institutions strategic investment choices, whereby alliances and joint ventures reduce costs and allow scarce resources to be freed to support priorities.

Research Assessment

Projecting current research trends, unless there is a reversal of the philosophy of progressive selectivity and concentration of research resources, it is difficult to imagine how differential fortunes can be avoided, even though the most damaging consequences are ameliorated by assessing subject groupings rather than institutions. While a distinct division into R, X and T institutions (research; teaching and research; and primarily teaching) has been rejected as a formal policy, there appears to be an almost inexorable drift in that direction through the cumulative effects of the research assessment which could be pronounced by 2010.

Yet the drift, which individual institutions seek to obviate or arrest, presents a significant challenge to one of the presumed underpinning concepts of higher education, namely the essential links between activity in research and in teaching. So any "drift" presents two challenges, one to the policy of a unified system and the second to what has been argued to be an essential ingredient of that system.

If further concentration of research excellence and resources does occur, it has been mooted that one logical correlate would be the development of graduate schools. Taught and post-experience programmes could be widely distributed but doctoral and postdoctoral work could be restricted to an elite group of institutions, presumably places that would qualify for Shattock's label of "real universities".

One possible solution to some of these dilemmas would be a redefinition of the linkage between teaching and research. Boyer in 'Scholarship Reconsidered' (1990) proposed four forms of scholarship: those of discovery; integration; application; and teaching.

Standards and the Purposes of Higher Education

According to the opinion column in the Times Higher Education Supplement on 30 December 1994, asking the question "What is the purpose of higher education?" is of mind-boggling generality. Perhaps so, but questions about standards and purposes are absolutely fundamental, if complex, multi-faceted matters, and it is not unreasonable that we should be invited to address them. Quality audit asks institutions how they determine and set standards for their awards. All stakeholders have an interest in comprehending what is meant by an award and knowing that the standards of such awards are consistently high. Professional bodies in effect attest to the quality of awards when they accept them for entrance, just as my Attestation of Fitness gave me entry to Edinburgh University in 1958. The academic community has considerable experience in setting and assuring standards. Perhaps what is missing is the sharing of that information with wider constituencies using common frameworks and terms.

Barnett (1992) listed four concepts of higher education:

(i) As a provider of quality personnel;
(ii) as a training for a research career;
(iii) as efficient management of teaching provision and
(iv) as a matter of extending life chances.

Historically, higher education developed the minds of the elite, the future of leaders of society. Newman's idea of a university was a residential community of teachers and students, devoted to discourses on knowledge. The vision of the research university developed in Germany. In the present century both strands were accommodated. As the traditional role of preparation for learned professions became increasingly formalized it overlapped with a third strand, vocational education. Further complexity is added by the fact that not all higher educational institutions are universities. Universities must subscribe to the values of higher education, but they can have additional ones, or offer distinctive features as places of higher education.

Barnett (1992) saw the binding feature of higher education as the development of reflective students "able to form and substantiate independent thought and action in a coherent and articulate fashion". This vision of higher education is concerned with higher order cognitive development. In "The Limits of Competence" Barnett argues that notions of academic and operational competence are limiting and limited, favoring instead life world becoming. To paraphrase Barnett, this would involve providing experiences for students which encourage:

- Systematic reflection;
- a curriculum as a set of possibilities in part framed by the student;
- genuinely open dialogue;
- observation of the rules of rational discourse, while acknowledging these can be changed;
- willingness to develop arguments for the appraisal of others on the course;

- an openness to possible forms of analysis, perspective and argument;
- the development of a questioning outlook;
- attention by students and staff to the character of the dialogue;
- a continuous reappraisal of one's own learning;
- testing the implications and validity of the argument in pragmatic situations, including ethical evaluations and
- exploring the implications for social, political, economic and other institutions of the arguments held to have (some) validity (Barnett, 1994, p. 183).

This is an interesting attempt to restate purposes and means in modern, even post-modern, terms. Before turning to "pitfalls, the following are the prediction of Indian higher education in 2010.

- Information technology will have transformed all aspects of university life.
- Serving the needs of adult learners will cause significant changes in the time scheduling and locations used for teaching, along with change in the style of teaching.
- Active learning will be the dominant style of pedagogy.
- Universities will have multiple sources, but no single dominant source of income.
- About one-third of the faculty will be fulltime, long-term employees; other assignments will be handled by a variety of other, short-term appointments.

Pitfalls and Principles

The present status of Indian higher education reveals the following pitfalls which are listed under the following ten items.

(i) Complacency
(ii) Self-centeredness
(iii) Muddling through
(iv) Bureaucratic overload
(v) Failing our students
(vi) Being unresponsive to growing social and cultural diversity
(vii) Neglecting any constituency or group of stakeholders for any sustained period of time
(viii) Making false promises
(ix) Espousing values which are not modeled by our practices
(x) Achieving lower still rather than higher still, mediocrity rather than different forms of excellence.

In some sense, the obverse of our potential pitfalls could serve as principles to guide us. We offer seven possible principles.

Build on Successs: The Indian system of higher education has one of the best completion rates in the world am a sound international reputation.

Experiment, Innovate but Evaluate: Other systems were developed in different settings. Borrowing or knowledge transfer is an established feature of life and especially of higher education. However, it is essential to ensure that the transferred idea or method is appropriate for the task or situation and that the transplantation will be successful. Experimentation and innovation are basic ingredients of higher education but even trial and error implies evaluation of efficacy.

Trust and Respect: The concept of collegiality is founded on trust and respect. It is also founded on of *standards and professionalism, of integrity. In a greatly* expanded and increasingly diverse system the underlying standards may need to be articulated if trust and respect are to survive as credible guiding principles; if an emphasis on self-regulation, at various levels of operation, is to survive.

Firm but Fair: Here our analogy is to use as a motto for higher education the qualities attributed to individuals. To be seen widely and consistently as "firm but fair" carries with it the implication of a willingness to listen, carefully evaluate and make clear consistent equitable decisions: in other words, connecting liberal traditions to consistent, thoughtful standards and practices.

Opportunity and Encouragement: Learning implies constantly changing horizons, a sense of 'openness, of inclusion. These ideas match with widening access, encouraging lifelong learning. fostering enthusiasm in learners - they do not resonate with closure, exclusivity, or demotivation.

Valuing Different Strengths, Roles and Purposes: Not everyone can or should be a fundamental/ researcher. Boyer (1990) offered shrewd advice when he encouraged equal value to be attached to the four forms of scholarship, that he categorized as: discovery,

(Contd, on page No. 15)

Organization and Structure of Teacher Education in Orissa

Ajay Kumar Mohanty
(Ram-eesh Institute of Education Greater Noida, 3-Knowledge Park-1, Kasna Road, G.B. Nagar, UP.)

Prior to the British occupation of Orissa, indigenous education was prevailing in Orissa State. There was no formal Teacher Education/Training in true sense of the term. The evolution of Teacher Education in Orissa is not isolated from the trends of growth and development of teacher education in the country. The first teacher training in formal sense was started 139 years ago i.e. in 1864 at Cuttack, after 17 years of establishment of the first normal school in India. Teacher Education institutions underwent drastic changes in the pre-independence period. By the time of independence, Orissa State had 15 Teacher Education institutions of three different categories, namely (a) Cuttack Training School (b) Guru Training School and (c) Training School for Lady Teachers.

The post Independence period has witnessed not only the increase in number of teacher education institutions. It has also seen massive changes in the organization and structure of teacher education systems. Some of them are: Elementary Training Schools were abolished and some of such institutions were converted into Secondary Training Schools; Basic Training Schools merged with Secondary Training Schools: the establishment of State Institutions of Education (SIE) which were converted to Directorate of Teacher Education and State Council for Educational Research and Training. The establishment of DIETs, and upgradation of Training Colleges into Colleges of Teacher Education and Institute of Advanced Studies in Education. The existence of private sector teacher education institutions and its abolition through Orissa Education Act (1989); phasing out of language teacher education institutions and establishment of Distance Education Center (DEC) for liquidation of untrained in-service teachers. By August 2003, Orissa State has 51 Secondary Training Schools, 17 DIETs, 04 Training Colleges, 06 Colleges of Teacher Education and 03 Institutes of Advanced Study in Education and some resource education institutions like Directorate of Teacher Education and the State Council for Educational Research and Training , Distance Education Center, Regional Institute of Education, IGNOU (Regional Center), State Institute of Educational Technology (SIET), English Language Teaching Institute (ELTI), District Primary Education Programme (DPEP), Orissa Primary Education Programme Authority (OPEPA), UNICEF Orissa office, and other stake holders of teacher education functioning for the development of teacher education programme in the State. With the establishment of National Council for Teacher Education (NCTE), in 1995, as a statutory body for development of quality teacher education, one of its regional offices also started functioning in Orissa, since 1996, which provides a boost to regulate the establishment, functioning and monitoring the quality teacher education programme. To a considerable extent, NCTE influenced the perceptions and policy perspectives of Teacher Education of Orissa.

Types of Teacher Education Institutions

Teacher education institutions of Orissa are of basically of three levels (a) Post Graduate (Higher) (b) Graduate (Secondary) and (c) Elementary Teacher education institutions run teacher education programmes of above three different levels. For better understanding about Organisation pattern of Teacher education systems, descriptions have been made programme wise, run by the institutions.

Higher Level

Master Degree in Education (MEd)

Three Institutes of Advance Studies in Education and one College of Teacher Education are running MEd, programme, with the combined intake of 96 students. Regional Institute of Education (RIE) also is conducting MEd (Elementary) course with an intake 32 students. All these four institutions are affiliated to three universities of Orissa, i.e. Utkal, Berhampur and Sambalpur.

Master Degree in Physical Education (MPEd)

Only one institution namely Government College of Physical Education, Bhubaneswar is running the MPEd programme with an intake of 16 students.

However, the MA Education which is considered an equivalent qualification to M Ed, as per NCTE regulations, for selection of lecturers, is functioning in good number of institutions. In Orissa there are no Universities teaching Department of Education. M A Education Programmes are running in different degree colleges. In recent years, after the imposition of ban on Private B Ed, M Ed, and restriction on correspondence B Ed and M Ed which was once considered a money making sources of Universities, some Universities like Utkal, North Orissa have started M A Education through Distance Mode. Without any substantial investment universities are earning more then ten lakhs a year. The main contention of writing about out of context is that these substantial groups of ill educated M.A. Education sources are included and multiplied in the stream of teacher education system in the country, particularly in Orissa State.

Graduate Level

Bachelor of Education (B Ed)

All the three Institutes of Advance Studies of Education (IASEs), six College of Teacher Education (CTEs) and four Training Colleges are imparting BEd, programme. The total intake of all these institutions is 1020 students. Besides, Regional Institutes of Education (RIE) is running two BEd, programmes of 100 intake each, namely, integrated B.Sc. BEd, and two years BEd.

Bachelor of Education (Distance)

The Regional Center of IGNOU, Orissa is running BEd Distance Education Programme with an intake of 200 students for the untrained in-service teachers.

Bachelor of Physical Education (BPEd)

Three physical teacher education institutions are running BPEd, programme; out of them, one is in private sector. Total intake of the BPEd programme is 152.

Shiksha Shastri (BEd Sanskrit)

Only one institution is running Shiksha Shastri programme in the state with an approved intake of 60 students.

Besides one English Language Training Institute is running Postgraduate Diploma for English Teaching (PGDET) course. This course is recognized by NCTE. The approved intake is 32 students.

Elementary Level

Teacher Certified (C.T.)

In Elementary level two types of institutions are functioning in the state. Secondary Training (ST) Schools and District Institutes of Education and Training (DIET) both type institutions are running some course i.e. C.T. course.

Secondary Training Schools

Fiftyone Secondary Training Schools are functioning in Orissa State. Out of them 49 institutions are under the Department of School and Mass Education and two institutions are under the welfare (SC & ST) department. Out of 49 institutions, 48 institutions are under the direct control of TE & SCERT. Only one institution, which is also only aided institution of Orissa is under the administrative control of Directorate of Secondary Education. The approved intake of all these institutions are 2490. One institution has stopped admitting students due to intervention of NCTE.

District Institutes of Education and Training (DIETs)

To provide academic and resource support at the grassroots level for the sources of various strategies and programmes being undertaken in the areas of elementary and adult education, DIETs are established. There are 17 DIETs functioning in Orissa State. All these DIETs are running C.T. course of elementary level teacher education programme. The total intake strength of all these DIETs is 850. Out of these 17 DIETs, 13 are full-fledged functional.

Certificate in Physical Education (CPEd)

Two institutions are running CPEd, programme in the state. Total approved intake is 110. One of them is under private sector.

Certified Teacher (Distance)

For liquidation of untrained in-service teachers of Elementary School Level, the Government of Orissa with the academic support of TE & SCERT has started Distance Education Center for Elementary level untrained school teacher. The course is designed in need based approach. The approved intake is 2250. It has been targeted to trained all the untrained in-service teachers of the state within five years.

Out of 86 Teacher Education Institutions of

Orissa, only two institutions are running on privately managed societies and one institution of aided category is managed by missionary trust. The Orissa Education Act 1989, prohibits opening of new Teacher Education Institutions at any level.

Structure of Teacher Education

In Orissa Elementary Level of Teacher Education includes the two years education imparted after 10+2 stage i.e. ten years of elementary and secondary education followed by two years of higher secondary education. The Secondary Level Teacher Education includes one year education imparted after the first degree i.e. Bachelor's degree, the three years study after 10+2 stages. The Master's Level Teacher Education is of one year duration imparted after the BEd. level, one year study after graduation. The educational programme involves contents, methods of teaching, practice teaching, internship in schools and practical except in Master Level Programmes where emphasis has been given on contents, research and specialization in any field of teacher education.

Academic Year

All these institutions follow organized system of teaching. The academic year generally begins in July and ends in May. But most of the times the admission procedures continue till the end of October. The NCTE norms suggested 150 days of teaching besides the practice teaching period, internship in school, examination and admission days.

Admission

At the Master Level Teacher Education Programme, admission is restricted. Only the better students can get admission. Restriction imposed by making Post Graduate as an entry qualification besides BEd, i.e., 10+2+3, Master degree (after or before) and BEd.

In Secondary (Graduate) Level (BEd) minimum essential qualification is 45% at graduation level with two school subjects. Though 45% marks is the prescribed entry qualification for BEd., only the fortunate who have secured more than 65% marks get a chance to be admitted. B Ed course is of high demand in Orissa State.

Admission in Elementary Level teacher education programmes are also in high demand. Though the prescribed entry qualification is 45% at the 10+2 level, the selection usually settled around 70% of marks.

Entry to teacher education of all levels are difficult, because of the limited number of seats, imposition of restriction on opening of new institutions and the possibility of employment opportunities in school, which attracts more to get admitted. There is no entrance test for admission. Selection of candidates to Teacher Education Programmes is being done centrally by a Central Selection Board. Selection has been made on the basis of career assessment in terms of summated scores.

Medium of Instruction

In B Ed, and M Ed level, medium of instruction is English. However, in Elementary level Teacher Education Institutions, Bi-Lingual instructions are imparted i.e., Oriya and English.

Examination System

For Secondary Level and Master Level Teacher Education Programmes Universities are conducting the examination. All the Universities follow the annual pattern examination.

For Elementary Level Teacher Education Courses, Board of Secondary Education, Orissa conduct the examination. The two years programme of C.T. course also follows the annual pattern examination.

Professionalization in Teacher Education has been a matter of concern in India. Importance of Teacher Education for bringing about quality improvement in the education system has been highlighted by various committees and commissions, the more particularly the National Policy on Education 1986 and 1992. Over the years, several innovative steps have been made by Government of Orissa for revamping teacher education system. The Statutory NCTE and other organization like NCERT, DPEP, and UNICEF have been attempting for re-orienting and re-structuring the teacher education systems of the State. But due to indifferent approach, lack of willingness, eager to change and lack of strong commitments, the State is facing several challenges. The facilities for teacher education both at the Elementary / Secondary and Master level stages are more than adequate. It is estimated that nearly 50,000 trained unemployed are on the live registers of employment exchanges.

Time has come to re-organize the organization and structure of teacher education systems of Orissa. Since the State does not now need large number of trained teachers, it could make a systematic effort to upgrade the quality of teachers, their education and training. Among others, these might be considered:

- some substandard / ill equipped institution should be phased out.
- special efforts need to be made for preparing teachers in subject areas, where there have been shortages of qualified teachers.
- efforts need to be made for preparing teachers in tribal belt.
- for promoting professionalism among teachers, duration of training particularly in BEd, and MEd, level be increased to two years, since there is no pressure from the school system.
- special efforts need to be made for preparing teachers who can teach outside the State / Country, making more avenue of employment, which indirectly attracts more talented students to choose career in teaching.
- the selection procedure need to be restructured entrance examination be introduced.
- longer duration of internship in school should be emphasized.
- the criteria for admission to teachers' education programmes be upgraded, so that only those with adequate academic background, attitude and commitment for teaching profession need to be selected for training. The organization pattern and Structure of Teacher Education of Orissa requires serious attention. ❑

(Contd. from page no. 11)

integration, application, and teaching. Likewise students, legitimately, can have differing primary *purposes in studying for a degree.* Barnet (1994), in his proposal for life world becoming recognizes the crucial role of students in dialogues about purposes.

Higher Still: Finally, one of the guiding principles of higher education must be advancement of the system, of institutions, of knowledge, of the levels and forms of understanding of individuals and in societies. Policies need to support that principle.

Conclusion

We are optimistic about the future of Indian higher education. Higher education is a fundamental component of the fabric of democratic societies, that is why it must model the values it espouses. We will be more optimistic if some of the points that have been raised in this paper are addressed.

References

1. Barnett, R. (1992). *Improving Higher Education - Total Quality Care*, SRHE/Open University Press, London.
2. Boyer, E. (1990). *Scholarship Reconsidered: Priorities of the Professoriate*, Carnegie Foundation, Princeton, NJ.
3. Tapper, T. and Salter, B. (1992). *Oxford, Cambridge and the Changing Idea of the University*, SRHE/Open University Press, Buckingham. ❑

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Legal System and Its Dimensions

APJ Abdul Kalam, the President of India, delivered the Convocation Address at the first convocation of the National Academy of Legal Studies and Research University, (Nalsar) Hyderabad on Friday, October 3, 2003. He said, "In the 20th Century, a nation's business transactions and wealth creation were based on transfer of materials, that is atoms, from one place to the other. In the 21st Century wealth is created whenever information in the form of electrons is transferred across networks in a borderless world. The Indian judicial system has to build its capacity to define jurisdictions in a way that any crime committed against India or her assets by anyone from anywhere shall be punishable by Indian law. It may be true for other countries also. The legal community must enable formulation of progressive and innovative laws for the digital economy that will be one of the vital components of a developed nation". Excerpts.

Leadership for the first vision of the nation to achieve independence was given by the legal community, which was in the forefront of the movement. As you are aware, India has a vision of transforming into a developed nation by the year 2020. I would like to suggest to the legal fraternity assembled here to think in what way they can contribute to the second vision of the nation, which is transforming-India into a developed nation. I will be discussing this aspect in my talk.

Transformation of India into a developed nation requires contribution from various sections of society, particularly from the legal community. The administration of law and justice should take into account the overall impact of judgments on the process of societal transformation and welfare of citizens at large. The rate of change of national development is directly proportional to the functional efficiency of the legal system and the quality of judgments. Keeping this aspect in mind I would like to share my thoughts on the topic "Legal System and its Dimensions" for national development.

The Universality of Law

Law and judiciary have a very crucial role to play in the development and evolution of a society. Law essentially plays the balancing role by resolving conflicts and ensuring justice and fair play when new opportunities and challenges are opening up in a developing society. In the earlier phase of Indian history, the laws, which were formulated, were basically catering for maintenance of the then prevailing social order, good morality and uplift of all segments of society. Later, the spirit and tradition of democracy, which was present at the grassroots level of Indian society, paved the way for establishing the supremacy and paramount importance of the rule of law. It is on this foundation that our democracy has flourished. Law has been viewed by us as an instrumentality for the good of the people and the well being of society. With time, the social system has gradually become more and more complex. In the present period, such complexities have further grown rapidly with modern industrialisation, surge in population and resultant increase in scarcity of natural resources, providing new challenges for the legal system.

Today we have well-conceived laws in areas which were earlier unheard of. Some of them were unimaginable in the previous centuries. We already have Laws of the Sea, Laws of Air and Laws on Environment. The Intellectual Property Laws and Cyber Laws are being refined. New scientific and technological knowledge like bio-technology, brain research, sensors and high performance computing systems have come into operation; laws to balance the interest of the people of today and technological progress have to be brought about. We must remember that in the case of human institutions, the roots of the present are submerged in the past. This holds equally true for law and legal institutions. Law is not a static body of rules but is an organic body of principles capable of growth and evolution. But for any law to be universally acceptable it must rest on the premise of common welfare. I would request you, young graduates, to keep this in mind while you are on the threshold of entering into the legal profession.

Majesty of Law and Justice

Every citizen in the country has a right to live with dignity and every citizen has a right to aspire for distinction. Availability of a large number of opportunities to resort to just and fair means in order to attain that dignity and distinction, is what democracy is all about. That is what our Constitution is all about.

And that is what makes life wholesome and worth living in a true and vibrant democracy.

At this point, I would like to remind all of us that at social levels it is necessary to work for Unity of Minds. The increasing intolerance for views of others and increasing contempt about ways of lives of others or their religions or the expressions of these differences through lawless violence against people cannot be justified in any context. All of us have to work hard and do everything to make our behaviour civilised to protect the rights of every individual. That is the very foundation of democratic values, which I believe is our civilisational heritage and the very soul of our nation. Nobility is the foundation of the legal system and it is the responsibility of every component of the legal system to preserve it.

Laws Driven by National Priorities

Opportunities for rapid industrial and economic growth today co-exist with new problems arising out of trade, competition and corporate mergers and take-overs. Many tiny and small sectors in industries and even artisan goods will be facing the forces of modernisation in the form of market forces, technologies and other forms of public information systems including advertisements. There are major issues of protecting the local and global environment. Let us look at science and technology, which has emerged as a strong force during the current period of human history. Basically science and technology is driven by human curiosity and reasoning and in its best sense aimed at spreading benefits to all people. They are basically universal in outlook. Similarly, laws are *meant to protect people, their rights and make them* feel secure in society. I think this is the common meeting ground between law, science and technology, people and society. Legal instruments must maximise benefits to our people and the nation. Laws must protect indigenous technologies and trade to the extent they impact people's living and their welfare as well as ensure national interest.

Restrictive Laws by Developed Countries

Many developed countries have made laws to restrict or deny export of certain classes of state-of-the-art goods and technologies, in a selective manner, to developing countries even while making international laws which make it mandatory for developing countries to open their markets for access by foreign entities with very little restrictions. India has successfully faced *such technology denial measures adopted by certain* countries. When our laboratories needed a certain type of alloy steel or super computers to develop indigenous systems, certain countries imposed a ban on export of such alloy steel or computers to India. As soon as we succeeded in the development of that particular alloy steel or high performance computers, the ban on export of that steel or supercomputers was lifted. But such an imbalanced world order is something on which our legal luminaries may have to think, while framing our commitments to international treaties.

The legal community must play a balancing role so that our technological growth can continue to be beneficial to our people and nation, free from undue interferences or unfair practices by any party with vested interests, domestic or foreign. Industrially developed countries are trying to make laws and treaties to protect and promote their own national interests and priorities, instead of working for win-win partnerships. India should work for win-win situations even in business and trade with ethics.

Information based Legal Advisory

We have to start the use of Information and Communication Technology (ICT) in legal dispute resolution at the grass roots level. I understand that there are a large number of civil and criminal cases under consideration and are accumulating particularly in High Courts and District Courts. Pending cases in various courts lead to enormous mental stress, agony, hatred, loss of transparency and huge loss of earning and wastage of manpower and delay in the progress of national development. ICT tools can be used to create an electronic advisory system to assist the public or local agencies as reportedly made available in healthcare through the Internet. Legal mentoring and revitalising *the village panchayat system through electronic* connectivity with the Courts by using ICT will create human rights awareness among the common public.

Cyber Law

Economic prosperity by 2020 will also mean that many Indians will be doing business in the digital world on the web. In this new era, crime, law and justice will be completely different from the present. In the present law, for example, jurisdiction corresponds to the location where the crime is committed and where the damage occurs - very often both being the same location. Whereas in the digital world, the crime may originate from a strange place even outside our own shores and may damage organisational wealth, which will be in the digital form in multiple locations. In the 20th Century, a nation's business transactions and wealth creation were based on transfer of materials, that is atoms, from one place to the other. In the 21st Century wealth is created whenever information in the form of electrons is transferred across networks in a borderless world. The Indian judicial system has to build its capacity to define jurisdictions in a way that any crime committed against India or her assets by anyone from anywhere shall be punishable by Indian law. It may be true for other countries also. The legal community must enable formulation of progressive and innovative laws for the digital economy that will be one of the vital components of a developed nation.

Conclusion

India is interested in bringing about global peace and development of the whole of mankind - the present six billion people is likely to rise to about eight billion by 2020. Every human being on this planet has the right to live with dignity and has a right to aspire for distinction while retaining one's unique identity. The test of any legal framework depends on its capacity and efficacy to ensure social, economic and political justice for an individual, not only in his individual capacity but also as a member of a nation or as a member of the global community. In other words, our individual and localised interests have to be harmonised within the larger pluralistic order, so as to give primacy to human rights. It is necessary to work towards Unity of Minds. It is the citizen's responsibility to do everything possible to make our behaviour civilised to protect the rights of every individual, without stamping out their individual characteristics and basic identity. For a peaceful human life, law and justice have to assist. If justice fails to protect human rights, the nation fails. It is the responsibility of each component of the legal system to ensure that these elements of rights, justice, liberty, equality and fraternity become available to all.

I would suggest that NALSAR should generate a database of 50 typical criminal judgments and 50 typical civil judgments from High Courts and the Supreme Court. This should be put on the NALSAR website. There should be a few classes and discussions to analyse and debate the effect of these judgments on the individual, society and national development. I consider that this practical experience will reinforce the knowledge base of future lawyers and legal experts and empower them to excel in their profession.

When you graduate from law institutions, you are carrying with you expertise in the field of law and also certain value systems imparted by the teachers and the environment of the academy. Success in your profession will be dependent on your professional integrity and nobility in all your endeavours.

My best wishes to all of you in your mission of safeguarding the rights of our citizens. ❑

ANNOUNCEMENT

Special Number of UNIVERSITY NEWS on 'Private Participation in Indian Higher Education: Contemporary Issues and Challenges'

The February 16, 2004 (Vol 42, No. 7) issue of the University News to be brought out on the occasion of XVI New Delhi World Book Fair will be a Special Number on 'Private Participation in Indian Higher Education: Contemporary Issues and Challenges'. The sub-themes identified for the issue are :

- Access and Quality in the Context of Private Participation;
- Legal and Ethical Issues;
- Role of Regulatory Bodies and Policy Perspectives;
- Privatization in the context of Globalisation, WTO and GATS in Indian scenario;
- Private State Universities in India;

The issue will contain articles contributed by Senior Academics from different parts of the World. Readers of the University News are also invited to contribute to the Special Number by submitting papers/articles on above theme and sub-themes by **December 30, 2003**. The papers will be published in the special issue subject to the approval of the Editorial Committee of the University News.

Manuscripts should be sent to:

The Editor, University News
Association of Indian Universities,
AIU House, 16 Comrade Indrajit Gupta Marg
(Kotla Marg), New Delhi 110 002

E-mail: aiu@del2.vsnl.net.in; Fax: 011 - 23232131

Workshop on Preparation of Research Proposals

A two-day Workshop on 'Preparation of Research Proposals by the College Teachers' sponsored by Tamil Nadu State Council for Higher Education, Chennai was organized recently by the UGC - Academic Staff College, Bharathiar University, Coimbatore. The Objective of the Workshop was to guide the teachers working in the Constituent Colleges of Bharathiar and Periyar Universities to prepare research proposals for funding from National and International level funding agencies. Thirty five teachers working in twelve Constituent Colleges of Bharathiar and Periyar Universities attended the Workshop. The Workshop was organized and co-ordinated by Dr. N. Balasubramanian, Director, UGC - Academic Staff College, Bharathiar University, Coimbatore.

The participants of the Workshop were categorized into five groups viz. teachers of Physical Sciences, Biological Sciences, Languages, History and Commerce as per their specialization. Plenary sessions on 'Statement of Problem, Justification and Rationale of the Study, Materials and Methods, etc were conducted by the Resource Persons. Participants in groups worked on Identifying Problems for Research Studies and Designing Research Projects and the participants developed individual Research Proposals. The groups of teachers viz. Physical Sciences, Biological Sciences, Languages, History and Commerce were guided by Prof. K.J. Rajendraprasad, Professor of Chemistry, Bharathiar University, Prof. G. Vanithakumari, Professor & Head, Department of Zoology, Bharathiar University, Prof. C. Sivashanmugam, Professor of Linguistics, Bharathiar University, Prof. N. Balasubramaniam, Reader in History, CBM College, Coimbatore and Prof. G. Gopal, Former Joint Director of Collegiate Education, Coimbatore respectively. The details of the Research Proposals prepared by the participants of the Workshop in physical sciences are - Study on change migration in polypeptides by Dr. R. Kumaresan; Synthesis, Stereochemical and Carcinogenic activity studies on strained olefins containing N-nitrasofinctions by Dr.S.Ponnuswamy; Role of Antioxidants in Metal Induced Damage by Dr. C. P. Saraswathy; Synthetic Studies on Quinoline and Indoloquinoline alkalolaids by Ms. R. Ulagi; Micronutrient Response Studies in Soils of Dharmapuri District by Smt. R. Jamunarani; A study on inviscid flow about a cyliden Rising to a free surface by Smt. V. Mallika.

Research Proposals prepared by the participants of the Workshop in Biological Sciences are - Statistical Analysis of Violent Crimes on Women by Dr. Venkatesan; Population :An Embedded System Design(Computer mediated simulated model) by Mrs. J. Bagyamani; Vermi Composting of Leaf Litter Garbage by Dr. M. Ramaswamy; Genetic Analysis and Commercial Cultivation of Medicinal Plants in Dharamapuri by R. Jayakumararaj; Developing Mathematics Model for Analysis of Pest and Disease Management in Coconut by K. Pachamuthu; Correction between Myelin Sheath Thickness and Axon size in Nerve Fibers in *Mammals (Shrew & Mongoose)* by Mrs. S. Sitalakshmi; Immunological Control of Adult *Mosquito, Culed Quinquerfaciatus* by Mrs. C. Vedanayaki;

Research Proposals prepared by the participants of the Workshop in languages are - Women Studies and Study of the Oppressed in African, American and Indian Writings in English (Fiction, Women Writers) by Dr. Gandhi Subramanian; Rhythms in Tamil and Malayalam (interdisciplinary with the department of music and Physics) by Dr. K. G. Venkataraman; A Study of Herbal Medicine by Dr. N. Chandran; Social Life of the Toads of Nilgiris and their Oral Literature by Dr. S.P. Nadarajan

Research Proposals prepared by the participants of the Workshop in Commerce are - A study on Housing Loan Schemes - Impact and Implications at Coimbatore District by Mr. R. Narayanaswamy; Performance of Mutual Fund Schemes on a Selected Scheme by Mr. P. Jayalakshmi; Overdues and its Impact in Primacy Agricultural Co-operative Banks by Mr. R. Ayyasamy; Rural housing Finance in Coimbatore District an Impact by Dr.G. Angayya

Research Proposals prepared by the participants of the Workshop in Commerce are -Mapping the Historic Sites other than Temples in Coimbatore Region by Dr. T. Ilango; Communists in the Politics of Tamil Nadu (1920-1947) by Mr. R. Jambunathan; Women Related Crimes in Periyar District by Mrs. T. Jothimani

(1978-2000); Environment Related Public Interest Litigation Cases in Madras High Court since Independence by Mr. A. Viswanathan; The Movement for State Autonomy with Special Reference to Tamil Nadu (1950 - 1990) by Mr. M. Kandasamy; Sri Lankan Armed Forces by Mr. V. Muralidharan; Industries of the Nilgris and their Impact by Mrs. R. Sriganapriya; Reservation Policies in Tamil Nadu in the Post Independence Era by Mr. A. Thennarasu

The participants were given a copy of the formats of Research Proposals Prescribed by ICSSR, UGC, CSIR, DST, IARI, ICHR, Science and Society Programmes of Government of India, etc. along with guidelines and copies of a few model proposals. Some of the recommendations made by the participants and the Resource Persons with respect to guiding teachers in preparing Research Proposals are:

- The workshop may be organized in two phases. During the first phase, teachers be appraised of the funding agencies and trained to prepare the proposals. During the second phase, the prepared proposals be evaluated and comments given. Accordingly, revision may be implemented for ready submission to funding agencies.
- Information regarding different funding agencies may be given to teachers by respective universities along with required formats and guidelines.
- The role of Information Technology in Research and Development in various fields may also be discussed during such workshops.
- A list of funding agencies at National & International levels may be provided to the participants along with required formats and guidelines.
- Lectures may also be arranged with respect to the objectives of various funding agencies so that the prepared research proposals may be relevant to the given funding agency.

In his Presidential Address during the valedictory session, Dr. Balasubramanian highlighted the qualities of a successful researcher besides bringing out the role played by the different Internet Forums in helping the academics not only in preparing the research proposals but also in getting funds from various international organizations. Prof. G. Vanithakumari, Professor and Head, Department of Zoology, Bharathiar University delivered the Valedictory Address. In her Valedictory Address Prof. Vanithakumari discussed the recent developments made in different walks of human life. She pointed out how Mathematicians and Statisticians could work along with Biologists so as to result in the emergence of a new field viz. Bio-informatics. The Resource Persons presented a report of their observation of the participants with respect to their interest, motivation, involvement, co-operation in making realization of all the envisaged objectives of the Workshop. Dr. R. Saravana Selvan proposed a formal vote of thanks.

Refresher Course in Physical Education

Maharashtriya Mandal's Chandrashekhar Agashe College of Physical Education, Pune organized a Refresher Course in Physical Education recently. Nearly twenty-one teachers working in different parts of the country participated in the Course. It was inaugurated by Dr. S A Sonawane, Dean, Faculty of Education, University of Pune, Pune. Thirty-five academicians and sports scientists working in universities, research institutes, colleges and hospitals etc. delivered lectures on different themes viz. Sports Medicine, Sports Injuries, Research Methodology, Sports Nutrition, Health Gain, Sports Psychology, Obesity, Sports Training, Sports Management, Curriculum of Physical Education etc. Prof. Magnous Aplqvist from Sweden spoke about Global Environment and Sustainable Education. Practical classes were conducted on Yoga Therapy, Aerobics, Athletics, Basketball, Tennis Volleyball, Power Walking, Massage, Weight Training etc. Hands on practice with computers was also provided to the participants in the computer laboratory. An educational tour was organized to the Army Sports Institute at Ghorpari, a premier Institute doing immense work in the field of Elite Sports Performance.

Prof. Gautam Sen, Director, BCUD - Pune University delivered the valedictory address. He spoke of creating Healthy People with Healthy Minds and that the education system needs to be revamped, as it determines the vitality of the nation. As per the new guidelines meant for the RCC during X plan period, all the participants were evaluated on different dimensions viz. General participation in the Course, presentation of seminars, submission of projects, active participation in the practical classes and performance of the written test given at the end of the programme. The Course was coordinated by Dr. V S Wangwad. Principal of the College, Ms. Nayana Nimkar was of the opinion that in the twenty-first century the Physical Education needs to be perceived in a different sense and the goals, objectives, and strategies for the development of subject and their incorporation into the educational policies, plans, curriculum materials and teacher education should be transferred to the professional community.

Out Reach Activities for College Youth

The Department of Adult, Continuing Education & Extension, University of Delhi initiated a series of programmes including Talk-cum-Discussions, Workshops, competitions to sensitise the college youth towards some crucial issues/problems identified by the College Programme Officers in different colleges such as legal awareness, career orientation, socialization, personality development, family relations, sex discrimination in family, waste management etc. Continuing the trend, the Department in collaboration with the Institute of Home Economics, New Delhi organized a Programme for Neo-literates on the occasion of International Literacy Day. Nearly 150 neo-literates participated in the Programme. In her inaugural speech Dr.(Mrs.) K Khanna, Director, IHE felt that some nodal colleges should be assigned the task of monitoring the activities supported by the Department. Dr. D D Aggarwal from DACEE in his address emphasized the necessity of some skill-based activities for the neo-literates so that they could generate some income for the family. Dr (Mrs.) Geeta Punhani incharge Extension Activities made presentation of activities conducted by the college youth and some neo-literates presented plays and poems.

Jesus & Mary College, New Delhi organized a poster competition on Healthy Living. Thirty girls from the college participated in the competition. Dr. (Mrs.) Amita Tiwari, Programme Officer, Jesus & Mary College and Mrs. Elizabeth Bharati, DACEE conducted the competition. Cash prizes were awarded to first three winners. The Department also organized a Talk-cum-discussion at Mata Sundri College, New Delhi under Student Activity Programme of the College. The Talk was delivered by Dr.(Mrs.) Archana Gupta, Medical Officer at W U S Health Centre, University of Delhi on Body Socialization. In her Talk she presented details of human anatomy, various organs and systems with focus on reproductive system, its constitution and functions. She explained about the system, some myths and misconceptions and advised the students to prepare themselves for healthy life. Mrs. Elizabeth Bharati from DACEE, University of Delhi suggested that some commonly asked questions with their answers should be published by the Department.

Dr. Veena Bhalla, Under Secretary, Association of Indian Universities, New Delhi gave a Talk on Career Planning in which she briefed the students about the significance of awareness of correct information and the sources where the students can seek career information. She told the students about the role and functioning of AIU in providing career information. She cautioned the students about the fake universities/ institutions and suggested the students to be sure about the credibility of the institution before taking up any course in any institution. Mrs. Shibani Roy and Mrs. S Biswas, Vidya Institute, New Delhi presented in detail about various courses/programs offered by their institution and other similar institutes for career development. Mrs. S Biswas observed that there was a noticeable shift in attitude both in parents and students in choosing a career. She felt that teaching was no longer the only option taken up by girls but they were looking for some professions vocations in great demand like media and advertising, management, travel and tourism and hospitality etc. Dr. Aggarwal, informed the participants that the Department would involve students in field based programmes so that they get direct experience of field work. He also made presentation of other activities of Department.

International Congress of Indian Pharmacy Graduates

A two-day International Congress of Indian Pharmacy Graduates 2003 (ICIPG 2003) on the theme 'Indian Pharmacist - Global Healthcare, Threats and Opportunities beyond 2005 was jointly organized by the Department of Pharmacy, Annamalai University and P N Branch of India Pharmacy Graduates Association. Dr. R Manavalan, Prof. & Head, Department of Pharmacy, Annamalai University was the Secretary and Mr. M Dilip Kumar, Secretary IPGA Tamil Nadu Branch was the Associate Secretary. A Student Rally was organized from Chennai to Chidambaram under the leadership of Olympian, Mr. R Natarajan and Alumnus of Annamalai University. Nearly 100 students participated in the rally. In his welcome address Dr. R Manavalan underlined the importance of pharmacy profession to the Society and also the objectives of the Congress. Dr. R Arivudai Nambi, Technical Officer (Drugs), Office of the Asst. Drug Controller, Government of India, Chennai presented the address received from Dr. M Venkateshwaralu, Dy. Drugs Controller of India, New Delhi.

Dr. L B Venkatrangan, Vice Chancellor, Annamalai University in his presidential address emphasized the need of integration of Indian system of Medicine with Allopathic Medicine for the betterment of ailing public. He has also announced the introduction of a mobile medical unit with adequate medical personnel and medicines for the use of rural public around Chidambaram. In the era of Globalization he stressed the importance of quality education and research. Honorable Health Minister, Mr. N Thalavai Sundaram, Government of Tamilnadu in his inaugural address listed various Health Welfare Schemes and Programmes launched by the Department of Health and Family Welfare, Government of Tamilnadu. Thiru G Renganathan, M.D., Sresan Pharmaceuticals, Chennai and Chairman of Local Organising Committee (LOC) Congress, addressed the gathering. Other Experts who presented papers in the Congress were Dr. R Sivakumar, M Pharm, Ph.D TTK-LIG Limited, Chennai on Quality Assurance and Pharmaceutical Validation: Dr. K Jose Kumar, Conybio Health Care India Private Limited, Chennai on Bioceramics: External Energy Medicine; Dr. Shu Cheus Li, Department of Pharmacy, National University of Singapore on Evidence based medicine and disease management implication for the profession of pharmacy; Dr. A Raghuram Rao, Principal and Head, University College of Pharmacy Sciences, Kakatiya University, Warangal on Drug design and discovery - What? Why? How ?; Mr. K G Revikumar, Professor and Principal, College of Pharmaceutical Sciences, Government Medical College Campus, Calicut on Pharmacy Practice in India: Past, Present and Future; Dr. V Gopal, Professor and Head, College of Pharmacy, MITHS, Pondicherry on Prospects in Herbal Medicine; Dr. Dhiraj, K Chopra, Bio Pharmaceutical Division, Millipore India Pvt. Ltd., Mumbai on Current Scenario of Pharmaceutical Industry; Dr. Sureshwar Pandey, M.Pharm., Professor of Pharmaceutics, College of Pharmaceutical Sciences, Manipal on Colon specific drug delivery system; Dr. Surachat Mgorsuraches, Ph.D. Head of Pharmacy Division, Principal of Songkla University Hatyai, Thailand on Pharmaco Economics; Dr. D Sampath Kumar, Dy. Manager, MDDS, Orchid Health Care, Chennai on Protein and Peptic Drug Delivery; Dr. S H Ansari, Reader, Pharmacognosy and Phytochemistry, Jamia Hamdard on Herbal Cosmetics; Dr. M Vimala Devi, CEO, Auropharma, Pondicherry on Phytopharmaceutical Industry: A future career opportunity for Pharmacy graduate.Two best papers from oral presentation and two best papers from Poster presentation were selected by a panel of Judges and awarded Cash Prize, memento and certificate to the winners.

The panel discussion was initated by Dr. R Manavalan, Secretary, IIPG 2003, while personalities from Academic Institutions, Industries and Drug control administration participated in the discussion. The valedictory function was presided over by Dr. M. Rathinasabapathy, Registrar, Annamalai University. Dr. R Manavalan, Prof. & Head, Department of Pharmacy, Annamalai University and Secretary LOC Congress welcomed the gathering while Prof. K R Arumugam, Correspondent, Utra College of Pharmacy, Madurai delivered a key note address. Mr. G Renganathan, Chairman LOC, ICIPG 2003. Prof. B. Paliappan, Dean, Faculty of Engg. & Tech., Dr. Sree Ramamoorthy, Banglore, Dr. K Kannan and Mr. N S Jeganathan, Department of Pharmacy Mr. M Dilip Kumar and Dr. R Arivudainambi participated in the function.

MBA in Technology Management

The Department of Business Management, Osmania University, Hyderabad has recently launched a Master of Business Administration Programme in Technology Management. The Programme was inaugurated by Dr. Kota Harinaryana, Vice Chancellor, Central University, Hyderabad. "The belief that Technology Management is only R&D function and an exclusive domain of technologists and scientists alone is a mere myth, whereas, the reality is that it is an all-pervasive activity covering not only R&D but also a broad spectrum of functional areas of production, marketing, finance, human resources management, etc. Similarly, the belief that technology management is a function of large and technology-centric organizations alone has been proved wrong, as technology has assumed the center stage not only in medium but also in small scale enterprises including even tiny and cottage units, and hence it is hard to imagine a business activity entirely devoid of technology", said Dr. Harinaryana while inaugurating the Programme. Continuing his address, he added that the omnipresent and omnipotent role of technology in all organizations, irrespective of their size, calls for a pressing need for 'technology literacy' on the part of future managers as their decisions in different functional areas have technology-related ramifications. Considering the critical relevance of technology management for the success and survival of individual companies and even the country as a whole, he underlined the need for creating an institutional framework for identifying right technologies, developing technology management capabilities, preparing technology road maps for skill and infrastructure development and starting a venture capital fund for supporting new technologies.

Prof. J Anantha Swamy, Vice Chancellor, Osmania University, who presided over the function, stated that India has proved its mettle in technology management and stole a march even over developed countries in nuclear science, space, aircraft and steel industries. He, however, called for the need for multiplying threes success stories. He added that technology management is not a one shot affair of acquiring or developing the latest technology, once in a while. He opined that technology management is a rather continuous process of invention and exploitation of the state-of-the-art technologies in order to compete successfully with the global industrial giants. He added that Osmania University will always be a forerunner in continuously experimenting with latest educational technologies to conceptualise and deliver educational products of global standards, both in substance and style. Prof. Mohd. Abbas Ali, Dean, Faculty of Management. Prof. D Ramchandram, Head, Department of Business Management, Mr. R Hanumanth Rao, Coordinator, MBA (Tech.Mgt) and Dr. R Nageswar Rao of the Department of Business Management also spoke on the occasion.

Commonwealth Universities Vice Chancellor's Conference

The Association of Commonwealth Universities Vice Chancellor's Conference was held recently at Belfast. About 300 Vice Chancellors from all over the world attended the Conference. The theme of the Conference was - "Universities have a responsibility to address the concern and challenges that are faced by society - and to communicate the message that they are indispensable to the knowledge economy." The delegates discussed what engagement meant in the context of economic development, education in a changing world, the political environment, and social and cultural issues. Prof. Ranbir Singh, Director, National Academy of legal Studies and Research University (NALSAR), Hyderabad presented a paper in the Conference on 'Universities engaging with their social and cultural Environment, NALSAR - A Case Study. Prof. Singh said that the universities could not afford to be only market places, neither education be a commodity traded on demand and supply. He emphasized that Universities were places of knowledge where education was a value to promote a new order based on a new jurisprudence on equality. He said that NALSAR was aware of its role and aspire to chisel lawyers who would be good human beings 'tall man' and live above the fog. He quoted the involvement of students in legal aid and awareness programme, drafting a bill to end child labour and other socially relevant activities. He said that the law university should produce technically sound, professionally competent and, most importantly, socially relevant lawyers.

Prof. Singh won a competition by writing in just 50 words the university's engagement with its environment. Prof. Singh presented following passage which won the competition - "Community based legal aid programme like LEAP (Legal Education Awareness Programme) backed by students placement with NGO's across the country and UNICEF Projects like 'Child Line' effectively engage the university with socially and economically disadvantaged and vulnerable (invisible) sections of the community. This enables the university to fulfill its obligation and dispense duty of producing developmental lawyers who would reach out to the unreached for providing access to justice." Prof. Singh has secured a rare honour where he was invited to convey greetings in the Opening Ceremony on behalf of Vice Chancellors of Asia.

Engineers' Day Celebration

The 36th Engineers' Day was celebrated by the Institution of Engineers, Bangalore recently. Renowned space scientist Prof. U R Rao was the Chief Guest of the function. He expressed concern that the engineering colleges are producing more engineers than country required. "The sudden spurt in engineering colleges and the output of engineers in the country is propelled by the speculative requirement but the economy cannot take it," Prof Rao said, while delivering the key note address. There are about 1,200 engineering colleges in the country and the output is about 3.5 lakh engineers per year. It is simply not possible for the country's economy to absorb all of them. he cautioned. "About 20 per cent of the engineers are jobless in the country today, the increasing output will only increase the jobless number", he added.

"Compared to Japan and USA which have 70 and 50 engineers per 1,000 people. India has only 35 engineers. 'India too needs to reach those standards, but before that the country's economy requires to grow at a much faster growth than it is doing now," he said. He called upon the engineers and scientists to work to develop technology for masses. "We have space technology, atomic technology but we import the technology of even the basic cameras from other countries. The country has failed to develop technology for the masses." he said.

His Excellency Shri T N Chaturvedi, Governor of Karnataka said that the commercialization of education must stop. "If education becomes expensive, poor meritorious students will be derived of higher and technical education," he said. On the occasion, five engineers were also felicitated for their service as engineers. They are Dr.P K Shanbag, Dr.B Srinivasa Reddy, Dr. N Govinda Raju, Dr.B C Basavaraju and Dr.Vikram Sirur.

Linking Diversities Forging Identities — Katha Utsav 2004

A Story Festival 'Linking Diversities Forging Identities - Katha Utsav 2004' is being organized by Katha a Non-Governmental Organisation located in New Delhi. Katha's main objective is to enhance the pleasures of reading for experienced readers as well as for those who are just beginning to read. And, inter alia, to stimulate an interest in lifelong learning that will help the child grow into a confident, self-reliant, responsible and responsive adult. The festival is a part of a larger programme of translation –The Katha Indo-European Translation Initiative. It is being organized at India International Centre, New Delhi. Nearly 150 writers established and emerging from India and Europe, thought leaders, critics, translators and fiction aficionados will attend the festival. As a build-up to the festival, works by Slavic and Swedish writers have been copyrighted in Hindi as also Roberto Calasso's 'Kaa', adapted into a book for children.

As a part of the festival, a series of academic Seminars 'Linking Diversities, Foreign Identities" have been organized in 23 colleges all over the country. Some of the Universities which are participating in the festival are H.P.University, Shimla; Babasaheb Bhimrao Ambedkar University, Lucknow; Rajasthan University, Jaipur; Gujarat University, Ahmedabad; Jadavpur University, Kolkata; Pondicherry University, Pondicherry; University of Mumbai, Mumbai; North Eastern Hill University (NEHU) Shillong; South Gujarat University, Surat; University of Madras, Chennai, Punjab University, Chandigarh, University of Mysore, Mysore; and Utkal University, Bhubaneshwar. Some of the confirmed European participants for the festival are Christopher Corr, UK's Popular Illustrator; Dorothee Wennet, Filmmaker, Film Critic and Writer from Germany; George Zsirtes, from Hungary who received the Faber Prize and the European Poetry Translation Prize. Irene Frain, Writer from France; Jean Echenoz, winner of big literary prizes in Europe; Krzysztof Zanussi a renowned Polish Filmmaker, Writer and Producer; Majgull Axelsson, Sweden winner of the prestigious August literary prize. Orhan Pamuk, a much awarded Writer, dubbed 'a new star' by the New York Times Book Review. Peter Zilahy a many faceted, much translated Author from Hungary. Roberto Calasso, the famed Author of Ka; Stephanos Stephanides, Professor and Translator from Cyprus; Theatre du Petit Miroit, French Puppet Group. Tim Parks a bilingual Writer and Translator. Lakshmi Holmstrom Translator, Critic, Academic. Daisy Rockwell teacher at University of Berkeley, USA. Marie-PaulBaussan French Artist. Barry Scott an Australian Arts Manager. Some of the items in the festival are The writers and translators' colloquium; The Katha Literary Film Festival; The Next Quest: Story in Activism, Media and Education; Master Classes; Remembering Rukmini: Seminar on Rukmani Devi Arundale: Certificate Workshops ;Grandparents-Teachers Association activities; SubO! Student music and theatre events; Lead workshops, storytelling for doctors, lawyers and CEOs. Plays for children and their teachers.For other details contact "Katha", A3, Sarvodaya Enclave, Sri Aurobindo MargNew Delhi 110 017. Tel: 2652-4350; 2652-4511. Fax: 2651-4373. E-mail: kathautsav@katha.org <mailto:kathautsav@katha.org>. or Log on to www.katha.org/

New Courses at GGSIPU

Guru Gobind Singh Indraprastha University, Delhi has introduced some new courses in paramedical sciences in the present academic session. These Courses are more relevant to the disability sector. The university has started courses like Bachelors in rehabilitation, audio and speech therapies, which are aimed at those students who want to specialize in these particular fields. Students are taking a lot of interest in the field of paramedics and courses related with paramedics. India has a population of around 10 million disabled people, but there are not enough specialists to help the disabled population. Study material for these courses have been conceptualized after consulting specialists from these particular fields. Apart from study material, students will also be given training in various paramedical institutions. Another course which is introduced from this academic year is Bachelors in banking and insurance. From the next academic session, the university has planned to introduce new courses like Bachelors in entrepreneurship management, hospital management, public and community health and nursing.

Refresher Course in English

A UGC sponsored Refresher Course in English was organized recently by the Department of English, North Eastern Hill University (NEHU), Tura Campus. Prof. Milton Sangma, former Pro Vice Chancellor was Chief Guest of the function. Prof. I K Sangma formerly D P I, Government of Meghalaya was guest of Honour. 26 participants from various colleges of Meghalaya attended the Course. Prof. S Ganguly, Course Director in his welcome address appraised the purpose of the Refresher's Course that it is a learning process by mutual exchange of views from the participants and resource persons. In his speech Prof. Milton Sangma reiterated that the learning is a never ending process and by exchange, of views and gathering new developments in the field of subject we may impart better education."Knowledge acquiring is a never ending process and students should be motivated to ask questions so that their logical thinking process is rejuvenated,"he said. Shri. I K Sangma gave a clarion call that the teachers should go to class well prepared so that they are in a position to express well to the students and satisfy their queries. The vote of thanks was proposed by Shri R S Thakur, Department of English, NEHU.

News from Agricultural Universities

Workshop on Improvement of Water Productivity

A three-day Workshop on 'International Collaborative Research Project on Improvement of Water Productivity' was organized recently by CCS Haryana Agricultural University, Hisar. While inaugurating the Workshop, Shri. M K Miglani, Vice Chancellor, CCS Haryana Agricultural University, Hisar said that for achieving sustainability in agriculture production it was imperative that farmers at the grass root level are acquainted with the efficient use of available limited water resources. He said that though the irrigation and its management practices during the last four decades have helped in boosting agricultural production and thereby making India self-reliant, yet their over-exploitation and injudicious use have caused the hydrological imbalances and this imbalance causing stability in agricultural production has become a major issue of concern for all. "Hence, in such scenario where constraints like water-logging and soil salinity have emerged due to rising water table on one hand and declining water table on the other due to over exploitation, it was essential on the part of the agricultural scientists, engineers and policy planners to chalk out the appropriate strategy whose implementation may help the nation in ushering in the second green revolution, said Shri. Miglani. Inviting participants' attention towards paucity of water, Shri. Miglani said that the share of water for agriculture in future is going to be considerably reduced due to increasing demand for other sectors. Hence, harnessing of rainfall water whose significant portion goes as runoff was equally important alternative available to the scientists and the policy planners. He said that such alternative measures would minimize our dependence on surface and ground water resources which have been created at huge cost. Appreciating the useful work done by the varsity scientists under the above referred collaborative research project the Vice Chancellor said that the data base containing the details of prevailing agro-climatic conditions, soil health, water resources, etc. would indeed go a long way in accelerating the agriculture production in the state in the times to come. Shri Miglani demanded formation of a committee for efficient and judicious implementation of the database on the part of the Department of Agriculture, Haryana.

Earlier in his introductory remarks, Dr. Jos Van Dam from Wageningen University and Research Centre, Netherland said that the project was allotted to CCS HAU in view of the excellent work done by CCSHAU towards the development of agriculture. Besides Netherland, he said, International Institute of Water Management, Sri Lanka and 'Water Watch' a private agency of Netherlands are collaborative partners of the Project.

About 60 participants comprising officers of the Department of Agriculture & Irrigation and Scientists of Agricultural universities from India and abroad are participating in the workshop. According to Shri R S Malik, Chief Scientist (Water Management), Department of Soil Sciences, CCS HAU, under this project computer model supported for extensive field experiments have been used to estimate water productivity in terms of crop performance at regional scale. Likewise, he said, data from remote sensing satellites have been used to obtain necessary crop parameters. Dr. S S Dahiya, Professor and Head, Department of Soil Sciences, Dr. Ranbir Kumar, Senior Expert, Soil and Water Engineering were amongst those who addressed the participants on the occasion. ❑

News from Abroad

Australian Studies Fellowships

Australia-India Council (AIC) is offering Fellowships for the Study of Australia for the year 2004 as part of the Australian Studies programme.. Indian nationals employed in, and Indian postgraduate students enrolled at, Indian universities are eligible for the programme. Applicants must be undertaking research on issues related to Australia. Applicants in the following fields are preferable for the fellowship.

- Australian literature, politics and history
- Environment and health
- Film, media, communications and performing arts
- Issues relating to indigenous Australians
- Ethnicities and multiculturalism
- Tourism
- Gender studies

Up to six senior and junior fellowships will be offered in 2004, tenable for periods of from 4-12 weeks. The sum awarded is intended to cover an economy airfare to and from Australia, approved internal travel and an accommodation and living allowance. The maximum amount for a single fellowship is AUD $10,000. Senior fellows will be selected on the basis of (i) demonstrated commitment, partly evidenced by publication and teaching, to the study of Australia and issues related to it; (ii) the quality of the research project to be undertaken during the fellowship; (iii) the likelihood of significant publication or other work emanating from the fellowship. Junior fellows will be selected on the basis of (i) record, (ii) dissertation topic and progress, and (iii) the quality of the proposed research project. Last date for the first round of application is 31 January 2004. For further details and information about the application form contact Dr. Maureen Perkins, Australia Research Institute, Curtin University of Technology, GPO Box U1987, Perth, WA 6845, Australia. E-mail: australianstudies@curtin.edu.au <mailto:australianstudies@curtin.edu.au>. Phone: 61 8 9266 4482. Fax: 61 8 9266 3166. See also: www.dfat.gov.au/aic <http://www.dfat.gov.au/aic>.

Omission

The article 'Transnational Providers and the Indian Education Market' published in the University News Vol. 41 No. 46 was jointly authored by Prof. A Gnanam, former Chairman, National Assessment and Accreditation Council, Bangalore and Dr. Antony Stella, Adviser, National Assessment and Accreditation Council, Bangalore. The inadvertent omission of the second author's name in the article is regretted.

Information Technology and the Virtual University: A Note

Information Technology and Education

Today, education is most professionally geared; students think about vocation and job-orientedness before choosing their areas of specialization .We have 'progressed' a long way from the emperical sciences and the liberal arts to computers and management ; and now to the much-in-demand field of information technology. In other words the knowledge of computers is not enough, we have to access information about other areas through the computers. And what we learn we have to apply or better still sell. This is professionalism. The man and the machine are no longer corollaries to one another; the machine is indeed dependent of the technical and utilitarian skills of man. On-line teaching is making the pedagogical processes more virtual and information technology is 'learnt' virtually via such models.

If the above is taken to posit changes and the introduction of innovative techniques in the context of education, then let us take an insight into what is happening visa-vis such changes. India is already saddled with such change, call it professionalism call it innovativeness. The IT market we are told is ready to absorb the growing demand and the incessant clamour for professional jobs. In other words education is understood today in terms of certain market realities; the demand and supply graph but above all its saleability or to coin the term: 'buyability'. Courses have value, more significantly so in terms of money: the dollar or the rupee. You complete the courses which cost a fairly big amount then your job absorption is more or less guaranteed. In the earlier days this no doubt happened in the form of campus recruitment, but these courses were open to those highly talented individuals who passed a written entrance test in the midst of stiff competition. Nowadays the supply is there, provided of course one has the ability or the willingness or both: to pay. The consumerism of the times has fortunately or unfortunately entered educational domains; the economics of education. However institutions like the Indira Gandhi National Open University insist on an entrance test for admission into its information technology programmes designed and type-cast into modules. That these programmes are a collaborative effort between the IGNOU and EDEXCEL London give to them a touch of internationalism. The job prospects are thus anywhere in the world and about 70% of the first batch of the ADIT (Advanced Diploma In Information Technology) products of the IGNOU were absorbed abroad. Mind you, another aspect of professionalism is also its foreign element i.e. the brain-drain, the predilection decidedly towards the foreign market. In India this is associated closely with status and of course the dollar.

Information technology then broadly speaking has two dimensions. One, is the access to it to be literate : in this sense, to have the world at the tip of your fingers and the other is specializing in such areas to be professionals. India is now feeling the onslaught of technology where the young and the old compete with one another to be computer savy. Once the demand has set in then the supply automatically comes, in the shape of cyber shops, courses etc., the question, one pauses to ask is how will the society benefit? Are we anticipating a situation where there will be only e-learning an expression which is the buzz word today? If so we might have educational shops and not institutions. Courses covering the gamut of disciplines will be freely sold. The problem then is back to square one, reaching the point of saturation where there will be too many and to few. The dichotomy here is between people and jobs, the demand and the supply.

The developing nations are now under the brunt of a technology-heavy way of life and education. That is good as this makes the world one place to use C.E.M. Joad's rather futuristic expression. The prognosis however is: when the rest of the country exacerbates towards more automation, will it then be able to keep pace?

Computer Literacy is no doubt a must, this means being not only computer literate but also being literate in an international language. The community information centres we are told in India are yet to be fully operational. These CICs should be viewed as community enabling centres, where the access to computer should, ideally speaking enhance the quality of life. And as the UNESCO document on education in the 21st Century states with clarity (i) Learning to Know (ii) Learning to Do (iii) Learning to Be and (iv) Learning to Live Together. One of the missions of IGNOU is to spread computer knowledge especially in rural areas, in association with the Community Information Centres. Here we may pause once again and ask which I think is a pertinent question: can we take the help of such community extension centers to make people literate? In other words can e-learning be used as a tool of communication for the masses? Since 1980s, we had been looking forward to the 21st Century, now let's look towards the 22nd at least. In other words we may think of using the different levels of technological realities to educate the people. If technology is advancing at a breakneck speed, let us not forget the hapless victims of poverty and literacy. This is then nothing to feel euphoric about, the true meaning of information technology in the third world economy points towards developing rural areas and when people have easy and cheap access to it. Therefore the utility of it has to be comprehended specifically in this context: that it is a media to educate and create impromptu classrooms in the villages and the remotest towns, let alone only the cities. Otherwise once again as of before, the yawning gap between the 'haves' and the 'have nots' will continue to persist. Technology as the Vice Chancellor of the United Kingdom Open University Sir John Daniel once pointed out, is also disruptive. What can we do to attenuate such a lopsidedness especially in a place where there is lack of development?

A word of caution too. Let us not forget the other kinds of technology in our frenzied rush towards modernity and all that is new. If education has to be holistic we have to identify its different strands into a composite whole. We are forgetting the printed word, we are forgetting the radio and the television in our franetic search for CDs. Let us not suffer from amnesia of sorts in our bid to catch up with the times, to tune ourselves to cosmetics.

Let there be more information technology trained professionals in India and the developing countries alike but let them also be geared towards altruistic causes. Further, let IT be an independent tool to enlighten and educate our masses to train people so as to train others. Let it in the final analysis unleash the power and force of cybernetics.

The Virtual University

Universities such as the Indira Gandhi National Open University have a virtual campus for its information technology courses and today we also have the newest model in distance education heuristics that of the Virtual University. Web Based instruction (WBI) has graduated into virtual campuses. This is a radicalization of traveling to a physical place, a campus integrated closely by time and place to that where the constraints of space and time are relaxed by information technology. We then begin to wonder whether learning based on classroom pedagogy will then continue to be relevant, in the face of such contemporary models of university learning.

What then is flexible learning? How do the flexible processes of learning integrate themselves into this new technological era? Learner autonomy is one such thrust area which makes learning more and more flexible and by implication virtual. The real classroom, something that we have been accustomed to for years, has now been simulated into the virtual one, where learning modes are both synchronous and asynchronous. The four elements of flexible learning are: (i) accessibility (ii) choice and control (iii) responsibility and (iv) support. The first is that Universities should enroll more students, have a diverse range of academic programmes and constantly gear towards specific target groups with an eclectic range of courses cutting across barriers of age-group, sex as well as for employed target groups. The second is learner autonomy. Learners should be allowed to study at their own place and pace: "when they want, what they want and how they want". The third is independent learning, and the fourth is the student support services.

When we speak of virtual learning what we will have to comprehend is that what is real but there are learning spaces, aided and abetted by "optical and acoustical signals in virtual spaces" "Distance is dead!". It is not only that the constraints of distance are relaxed, but also that of time and space. Net based learning is undoubtedly a real experience, it is not a phantasmagoria or an unreality but strengthened perhaps by learning which is experiential, and where also there is the scope for new pedagogical models. The simplest way of beginning in this kind of an approach, would be to download learning material, submit assignments on line. examinations on line can also be conducted. However if we are thinking of a Virtual University then even the classroom and its appendages must be simulated. There can be a library a virtual library for example. But simply delivering learning materials to students is not teaching. Otto Peters says "In my opinion web-based education is distance education and must also embrace more teaching and learning activities than just delivering, namely virtual tutoring, virtual group work, virtual seminars, virtual practice in simulated companies, laboratories and excursions. A Virtual University must be able to provide for these services. More even: It must develop new pedagogical approaches which exploit the unique potential of on-line teaching." In such a post-modern critique there is the withering of the learner where learning goals or outcomes are self-directional, as opposed to teacher directed learning. Learning is an individuated process the epistemic devices in this context are technological. Some of the examples of Virtual Universities are the Internet Universities in Sydney and the Virtual University in Hagen, West Germany. So what we are doing in effect is replicating models, transplanting "conventional models of teaching and learning from real spaces into virtual spaces". What are the pedagogies involved here? Are they only parallels to lectures, seminars and practicals? Chat sessions will further enhance learning modes making this asynchronous. Learning by doing and discovery is another aspect of self-learning which a digitized learning environment can help to discover. Pedagogical models such as interactive learning both between teacher and taught, as well as among peer group, quizzes and role plays can perhaps be devised in this new digitized ambience. What are learning outcomes here? will be another epistemological question. The courses should be web-based rather than web-enhanced. These are I know open ended questions but given the matrix of learner autonomy and contiguity that we are speaking about then the web must enhance learning in a creative and resourceful manner. What are the courses to be taught is another question. How do we re-structure our educational system and get ourselves out of this degree bias? How do we subvert educational hierarchies? In a country like India education is highly rigid and structured. The Indira Gandhi National Open University has taken a giant leap in this direction towards restructuring by asseverating the rights of Certificate and Diploma courses which are need based and professional in their own right. Hopefully the virtual campus of the University will expand and ramify into a Virtual University and University within an University or will the Virtual University remain as the only pedagogical model? These are futuristic questions and at this point in time it might be premature to ask them, but one thing is certain that the real/virtual debate in Universities has been initiated in the Indian context. If we are also able to integrate the other technological aspects such as tele-learning / visuals, two way audio and video etc. into a holistic model in our Virtual University systems we will then have a complete model of integrated pedagogy. It is pedagogy which must drive information systems and not vice-versa.

The University within an University model can capture our imagination in the 21st Century if we are to radicalize any systemic thinking, and bring innovation or change in this regard. The traditional Universities can give a serious thought here: introducing both on campus and off-campus dichotomies via Web Based instruction. The pedagogy in such traditional set ups will have to be re-defined, but the very people involved in the conventional system will have to acclimatize themselves to such changes, which in effect must be attitudinal.

The real/virtual debate is not only that of change for change's sake, but rather it is the question of convenience, flexibility and accessibility. Learner autonomy is in consonance with the very philosophy of life long education giving the opportunity also to 'sandwich' courses between working time and studying time. What about literacy? Can information technology be a role model in this regard? The internet is gradually changing the concept of education in India thanks to the Open Universities. What we can do for the physically and mentally challenged with the help of this rapidly proliferating technology is another question which needs critical addressal.

Distance Education has rapidly progressed from the printed word to what may be termed as the visual word ensconced in time-space continuum or realities. This inexorable leap into time and space has given it the much needed access as computers are available even in middle-class homes today. Distance Education has also exploded its own myth: that of separation of the learner from the teacher. Speaking of 'distances' on the one hand, it has in actuality reduced distances. Such de-mythification is an example of its many complexities and even paradoxes.

A S Guha
IGNOU, Regional Centre, Shillong, Meghalaya ❑

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities (Notifications received in AIU during September-October, 2003)

AGRICULTURAL & VETERINARY SCIENCES

Agronomy

1. Pangarkar, Vinayak Narayanrao. **Response of promising mustard (Brassica juncea (L.) Czern and Cosson) cultivars to varying population in irrigated condition.** (Dr D K Shelke), Department of Agronomy, Marathwada Agricultural University, Parbhani.

Entomology

1. Dadmal, Suresh Madhaorao. **Mechanism of host plant resistance in brinjal to leucinodes orbonalis guen.** (Dr N R Naitam). Department of Entomology, Dr Panjabrao Deshmukh Krishi Vidyapeeth, Akola.

2. Kale, Vasant Dhondiram. **Studies on thiamethoxam fipronil abamectin and spinosad against pests of okra.** (Dr M D Dethe). Department of Entomology, Mahatma Phule Krishi Vidyapeeth, Rahuri.

3. Ramesh Lal. **Development of resistance to some insecticides in diamond back moth, Plutella xylostella (L.).** (Dr J K Sharma), Department of Entomology, Ch Sarwan Kumar Himachal Pradesh Krishi Vishwavidyalaya, Palampur.

Extension Education

1. Sharma, Anil Kumar. **Status of vegtetable growing in Jalandhar and Moga districts of Punjab.** Department of Extension Education, Punjab Agricultural Unviersity, Ludhiana.

Plant Breeding

1. Meenakshi. **Genetic analysis of some morphophysiological characters associated with drought tolerance in wheat (Triticum aestivum L.).** (Dr S C Sharma), Department of Plant Breeding, Ch Sarwan Kumar Himachal Pradesh Krishi Vishwavidyalaya, Palampur

2. Sharma, Monika. **Genetic response for grain yield through component trait selection under diverse environments in durum wheat (Turgidum var durum).** Department of Plant Breeding, Punjab Agricultural University, Ludhiana

Plant Pathology

1. Naqvi, Rakhat Ara. **Insect pest management strategies in brassica compestris variety brwon sarson with special reference to bio-ecological studies on potential predators of lipaphis erysimi (Kaltenbach).** (Dr P Q Rizvi), Department of Plant Pathology, Aligarh Muslim University, Aligarh.

2. Ramandeep Kaur. **Characterisation of selected isolates of nonpathogenic fusarium oxysporum fluorescent pseudomonads and their efficacy against chickpea wilt.** Department of Plant Pathology, Punjab Agricultural University, Ludhiana.

3. Sharma, Abhishek. **Epidemiology and management of anthracnose of mango (Mangifera indica L.).** Department of Plant Pathology, Punjab Agricultural University, Ludhiana.

Sericulture

1. Venkataramu. **Studies on improvement of seed quality, fecundity and handling of eggs in the silkworm, Bombyx mori L. in tropics.** (Dr H K Hurkadli), Department of Sericulture, Bangalore University, Bangalore.

Soil Science

1. Sikka, Rajeev. **Influence of soil characteristic on available Pb and Cd and their accumulation by brassica SP.** Department of Soil Science, Punjab Agricultural University, Ludhiana

Vegetable Science

1. Pathak, Sanjeev. **Heterosis and combining ability studies in cabbage (Brassica oleracea Var. capitata L.).** (Dr Jagmohan Kumar), Department of Vegetable Science, Ch Sarwan Kumar Himachal Pradesh Krishi Vishwavidyalaya, Palampur

Veterinary Science

1. Bannalikar, A S. **Conventional and molecular characterisation of nontuberculous mycobacteria (NTM) from animals and their environment.** Department of Veterinary Bacteriology, Indian Veterinary Research Institute, Izatnagar.

2. Bhanja, Subrat Kumar. **Feasibility of in ovo amino acid injection for embryonic growth and optimizing total and digestible amino acid requirements for meat production and immunocompetence of broiler chicken.** Department of Poultry Science, Indian Veterinary Research Institute, Izatnagar.

3. Moregaonkar, Santosh Dhondopant. **Efficacy of a commercial mycotoxin binder in preventing aflatoxic and ochratoxic pathology in brioler birds.** (Dr N M Degloorkar), Department of Veterinary Pathology, Maharashtra Animal and Fishery Sciences Unviersity, Nagpur

4. Naveen, K A. **Studies on characterisation and pathogenicity of newcastle disease virus isolated from pigeons in India.** Department of Avian Diseases, Indian Veterinary Research Institute, Izatnagar.

5. Patil, Girish S. **Detection of species origin of meat by molecular techniques.** Department of Livestock Production Technology, Indian Veterinary Research Institute, Izatnagar

6. Patil, Nanagouda A. **Therapeutic efficacy of megasphaera elsdenii and veillonella parvula in lactic acidosis in cattle.** (Dr P Dhanapalan), Department of Veterinary Clinical Medicine, Ethics and Jurisprudence, Tamil Nadu Veterinary and Animal Sciences University, Chennai

7. Ponnusamy, K K. **Endoscopic evaluation of gastro intestinal tract in canine renal failure.** (Dr S Prathaban), Department of Veterinary Clinical Medicine, Ethics and Jurisprudence, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

8. Prasanna, K. **Molecular pathology of Ochratoxicosis in rats and detection of the toxin by enzyme linked immunosorbent assay.** Department of Veterinary Pathology, Indian Veterinary Research Institute, Izatnagar.

9. Rahal, Anu. **Pharmacokinetic and bioavailability studies on Enrofloxacin ciprofloxin and diclofenac in sheep.** Department of Veterinary Pharmacology, Indian Veterinary Research Institute, Izatnagar.

10. Ravikumar, G V P P S. **Molecular characterisation of Glucose-6 Phosphate-Dehydrogenase gene in cattle.**

Department of Animal Genetics, Indian Veterinary Research Institute, Izatnagar.

11. Satish, B S. **Molecular characterisation of Avian isolates of pasteurella multocida.** Department of Veterinary Bacteriology, Indian Veterinary Research Institute, Izatnagar.

12. Shivakumar, B M. **Development of divergent lines for sheep RBC response in WLH chicken and their evaluation by molecular genetic and immunological tools.** Department of Animal Genetics, Indian Veterinary Research Institute, Izatnagar.

13. Shrikant. **Studies on immune status of goats during *pregnancy and heat stress.*** *Department* of Animal *Physiology*, Indian Veterinary Research Institute, Izatnagar.

14. Singh, Shyamasana. **Molecular and immunological characterisation of Turkey varieties.** Department of Animal Genetics, Indian Veterinary Research Institute, Izatnagar.

15. Smajdar, Tanmay. **Livestock *grazing in Kumaun* hills: A problem analysis in natural resource management.** *Department of Veterinary Extension Education, Indian Veterinary* Research Institute, Izatnagar.

16. Thirumurugan, P. **Studies on production and reproduction performance of crossbred (Landrace x Desi) gilts fed on rice bran based diets.** Department of Livestock Production Management, Indian Veterinary Research Institute, Izatnagar.

17. Venugopal, Shyam K. **Evaluation of trochlear sulcoplasty and transposition of tibial tuberosity for the management of patellar luxation in dogs.** (Dr K Ameerjan), Department of Veterinary Surgery and Radiology, Tamil Nadu Veterinary and Animal Sciences University, Chennai

BIOLOGICAL SCIENCES

Biotechnology

1. Das, Padmalaya. **Host immune response to the recombinant protein and synthetic peptides of plasmodium falciparum histidine rich Protein II and erythrocyte membrane Protein I.** (Prof V S Chauhan and Dr B S Das), Department of Biotechnology, Sambalpur University, Jyoti Vihar, Burla

Botany

1. Bansode, Milind Shamrao. **Contributions to the Kamthi Flora of Maharashtra.** (Dr B A Vagyani), Department of Botany, Shivaji University, Kolhapur.

2. Bhamburdekar, Sharad Baburao. **Germination studies in pigeonpea (Cajanas Cajanl.).** (Dr P D Chavan), Department of Botany, Shivaji University, Kolhapur.

3. Dorcas, M. **Microbial ecology of four common weeds of Hyderabad.** (Dr T Saikrishna), Department of Botany, Osmania University, Hyderabad.

4. Farah Jabeen. **Induction of mutations in Cicer Arietinum L by chemical mutagens.** (Prof M Y K Ansari), Department of Botany, Aligarh Muslim University, Aligarh.

5. Hiregoudar, Lingaraj Vasantagouda. **In vitro *propagation of feronia limonia* (L.) *Swingle.*** (Dr H Niranjana Murthy), Department of Botany, Karnatak University, Dharwad.

6. Kamble, Ananda Baburao. **Effect of pesticides on the physiology of trigonella foenum-graecum L.** (Dr A B Sable), Department of Botany, Shivaji University, Kolhapur.

7. Khan, Hamid Ali. **Studies on the seasonal variation of phloem and xylem production in some tropical trees.** (Prof Ishrat Husain Khan), Department of Botany, Aligarh Muslim University, Aligarh

8. Khomane, Balasaheb Vithoba. **Wasteland development: Assessment of growth of woody plants on waste land.** (Dr L J Bhosale), *Department of Botany, Shivaji University, Kolhapur.*

9. Mahamulkar, Suresh Haibatrao. **Taxonomical studies in the fungi of India.** (Dr M S Patil), Department of Botany, Shivaji University, Kolhapur.

10. Minakshi. **Coinoculation effects of plant growth promoting rhizobacteria and bradyrhizobium on growth and nodulation of pigeonpea (Cajanus cajan (L.) Millsp).** Department of Botany, Kurukshetra University, Kurukshetra.

11. Mishra, Rajendra Prasad. **Eco-physiological and *phytochemical study of Rauvolfia species with special* reference to their conservation and management.** (Dr D *Chatterjee*), *Department of Botany, Awadhesh Pratap Singh* University, Rewa.

12. Patil, Goudappa Mallanagouda. **Cytogenetical studies in Clitoria ternatea L. (Papilionaceae).** (Dr B C Patil), Department of Botany, Kakatiya University, Warangal.

Zoology

1. Aravindan, V. **Effect of salinity stress on the caudal neurosecretory system of gobiid fish, Glossogobius giiuris (Ham).** (Dr P Sivagnana Murthy), Department of Zoology, Bangalore University, Bangalore.

2. Bhosale, Tanaji Shivaji. **Effect of starvation and aestivation on the gonads and male reproductive organs of semperula maculata.** (Dr S G Nanaware), Department of Zoology, Shivaji University, Kolhapur.

3. Chadha, Pooja. **Genotoxicity evaluation of pan masala and gutkha and its modulation by Chyawanprash Awaleha and Vitamin C.** Department of Zoology, Kurukshetra University, Kurukshetra.

4. Kumbhar, Sanjay Nanaso. **Cadmium induced toxicity to the estuarine clams from Ratanagiri Coast of Maharashtra.** (Dr D V Muley), Department of Zoology, Shivaji University, Kolhapur

5. Marimadaiah, B. **Studies on some natural enemies *of Spilosoma obliqua* Walker (Lepidoptera: Arctiidae) and certain other lepidopteran pests infesting mulberry.** (Dr Geetha Bai M), Department of Zoology, Bangalore University, Bangalore

6. Sri Kumar. **Studies on physiological changes in the silkworm Bombyx mori L. following mating.** (Dr Manjula Kumari D), Department of Zoology, Bangalore University, Bangalore.

7. Venugopalan Nambiar, M. **Studies on larval and adult echinostomes (Tromatoda: Digonea) in Malabar, Kerala.** (Dr K P Janardanan), Department of Zoology, University of Calicut, Calicut.

EARTH SYSTEM SCIENCES

Environmental Science

1. Naik, Raja. **Studies on biodegradation process in Bhadra River sediment by aqatic fungi.** (Dr E T Puttaiah), Department of Environmental Science, Kuvempu University, Shimoga.

2. Raghavendra, K. **Modelling approach for the *optimization of water quality monitoring* of River Cauvery at Kollegal Stretch.** (Dr R K Somashekar), Department of *Environmental Science*, Bangalore *University*, Bangalore.

3. Vijaya Kumara. **Studies on ground water quality of Bhadravathi Town.** (Dr J Narayana and Dr E T Puttaiah), Department of Environmental Science, Kuvempu University, Shimoga.

Geology

1. Guptha, A K. **Integrated groundwater studies in Pavagada Taluk, Karnataka using remote sensing data.** (Dr Narahari Rao K L), Department of Geology, Bangalore University, Bangalore.

2. Raza, Md Asif. **Integrated groundwater resource management: Study of the Northern part of Gandak-Ghagra Interfluve.** (Prof S H Israili), Department of Geology, Aligarh Muslim University, Aligarh.

ENGINEERING SCIENCES

Civil Engineering

1. Patil, Ushadevi Ganpatrao. **Effect of soil structure interaction on the response of tall plane frames subjected to seismic loading.** (Dr K T Krishnaswamy), Department of Civil Engineering, Shivaji University, Kolhapur.

Electrical Engineering

1. Udupi, Vishwanath Rangrao. **Morphological feature extraction and detection of leukemia and skin cancer using adaptive intelligent system.** (Dr H P Inamdar), Department of Electrical Engineering, Shivaji University, Kolhapur.

Electronics Engineering

1. Mudholkar, Ravindra Ramchandra. **Transformer design: A fuzzy approach.** (Dr S R Sawant), Department of Electronics, Shivaji University, Kolhapur.

Food Technology

1. Azad, Z R Azaz Ahmad. **Effect of treatments, packaging materials and storage conditions on physico-chemical characteristics and shelf life of buffalo meat.** (Prof P K Srivastava), Department of Post Harvest Engineering and Technology, Aligarh Muslim University, Aligarh.

Future Studies

1. Ashok Kumar. **Modelling of katabatic winds over Schimacher Region of East Antarctica and prediction of impact of global warming of katabatic winds.** (Dr V B Gupta and Dr H N Dutta), Department of Future Studies, Devi Ahilya Vishwavidyalaya, Indore.

2. Patankar, Harihar. **A comparative study of socio economic development of tribal population in M P and Orissa: Present and future prospectives.** (Dr V B Gupta), Department of Future Studdies, Rani Durgavati Vishwavidyalaya, Indore.

Mechanical Engineering

1. Jain, Ajai. **Integration of process planning and scheduling.** Department of Mechanical Engineering, Kurukshetra University, Kurukshetra.

2. Mahesh, N S. **Some studies on spray casting of aluminum-silicon alloys.** (Dr B K Muralidhara and Dr M K Muralidhara), Department of Mechanical Engineering, Bangalore University, Bangalore.

MATHEMATICAL SCIENCES

Mathematics

1. Bhosale, Bharat Namdeo. **Topics in the theory of integral transformations of generalised functions.** (Dr M S Chaudhary), Department of Mathematics, Shivaji University, Kolhapur.

2. Chaudhari, Shrikant Ramesh. **A study of fuzzy automata theory.** (Dr H V Kumbhojkar), Department of Mathematics, Shivaji University, Kolhapur.

3. Itagi, Medha Krishnaji. **Some topics on distance in graphs.** (Dr H B Walikar), Department of Mathematics, Kakatiya University, Warangal.

4. Madhav, Khairnar Shamkant. **A study of some geometrical aspects in univalent and multivalent function theory.** (Dr S K Kulkarni), Department of Mathematics, Shivaji University, Kolhapur.

5. Nagarathna, N. **Nonlinear penetrative convection in fluid and porous layers with heat flux prescribed on the boundaries.** (Dr P K Srimani), Department of Mathematics, Bangalore University, Bangalore.

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No. BBA/Advt/2003 Dated the: 3rd December, 2003

In the advertisement of this University issued under No.BBA/Advt/2003, dated 15th October 2003, in Col. No.2 of the Table under the title name of the post please read "Physics/Agro-Meteorology" at Sr. No. 10 in the cadre of Assoc. Professor and at Sr. No. 11 in the cadre of Assistant Professor instead of only "Physics". The other conditions and reservations shown earlier will remain unchanged. The last date for sale of application forms and for its submission duly filled in, only for the posts under the subject of Physics/Agro-Meteorology is extended upto **30th December, 2003.**

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